STIC Search Report
EIC 1700

STIC Database Tracking Number: 114512

TO: Amanda Walke **Location:** 9D64 **Art Unit : 1752** **February 19, 2004** **Case Serial Number: 10/070477**	**From: Michael Newell** **Location: EIC 1700** **REMSEN 4A30** **Phone: 571/272-2538** **MNewell@uspto.gov**

Search Notes

Deliver to Remsen 9D64. Thank you.

STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact ***the EIC searcher or contact:***

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 1713*
- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

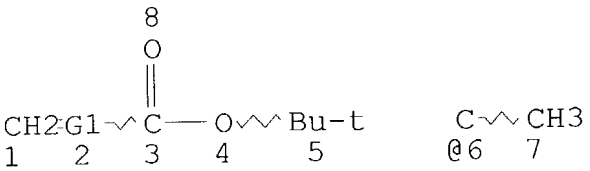
- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art **not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

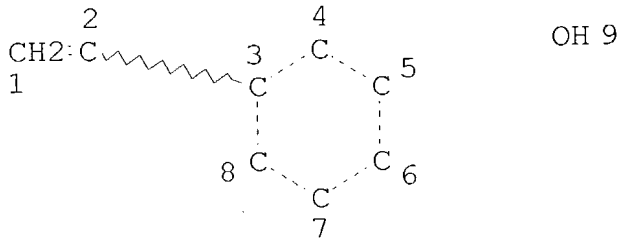
```
=> d his

     (FILE 'HOME' ENTERED AT 10:33:11 ON 19 FEB 2004)

     FILE 'LREGISTRY' ENTERED AT 10:33:21 ON 19 FEB 2004
L1                STRUCTURE
L2                STRUCTURE
L3                STRUCTURE

     FILE 'REGISTRY' ENTERED AT 10:53:39 ON 19 FEB 2004
L4                SCREEN 2043
L5              0 S (L1 AND L2 AND L3 AND L4) SSS SAM
L6              0 S (L1 AND L2 AND L3) SSS SAM
L7              0 S (L1 AND L2) SSS SAM
L8              2 S L1 SSS SAM
L9             50 S L2 SSS SAM
L10             0 S L3 SSS SAM

     FILE 'LREGISTRY' ENTERED AT 11:39:46 ON 19 FEB 2004
L11               STRUCTURE
L12               STRUCTURE
L13               STRUCTURE

     FILE 'REGISTRY' ENTERED AT 11:47:01 ON 19 FEB 2004
L14             2 S (L12 AND L2 AND L13 AND L4) SSS SAM
L15            58 S (L12 AND L2 AND L13 AND L4) SSS FULL
                  SAVE L15 WAL477/A

     FILE 'CAOLD' ENTERED AT 12:08:48 ON 19 FEB 2004
L16             0 S L15

     FILE 'HCAPLUS' ENTERED AT 12:09:00 ON 19 FEB 2004
L17            49 S L15
L18        156025 S PHOTORESIST? OR RESIST OR RESISTS OR PHOTOMASK? OR MASK
L19            40 S L17 AND L18
L20             9 S L17 NOT L19

     FILE 'LREGISTRY' ENTERED AT 12:11:10 ON 19 FEB 2004

     FILE 'HCAPLUS' ENTERED AT 12:13:02 ON 19 FEB 2004
L21         23768 S LIGHT(2A)SENSITIV? OR LIGHTSENSITIV?
L22             4 S L19 AND L21
L23            36 S L19 NOT L22

=> d que stat l15
L2                STR
```



VAR G1=CH/6
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

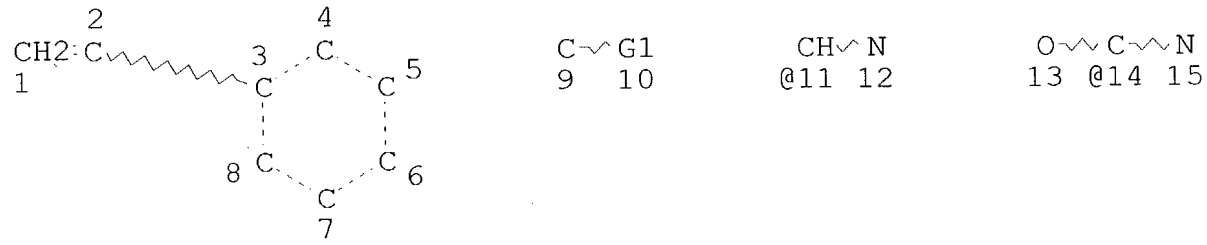
STEREO ATTRIBUTES: NONE
L4 SCR 2043
L12 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE
L13 STR



VAR G1=CL/BR/OH/CN/T-BUO/11/14
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE
L15 58 SEA FILE=REGISTRY SSS FUL (L12 AND L2 AND L13 AND L4)

100.0% PROCESSED 3580 ITERATIONS 58 ANSWERS
SEARCH TIME: 00.00.01

=> d l22 1-4 cbib abs hitstr hitind

L22 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN
2003:806137 Document No. 139:330314 Chemically amplified positive-working **photoresist** composition containing specific acetal polymer. Adams, Timothy G.; Coley, Suzanne (Shipley Company,l.L.C., USA). Jpn. Kokai Tokkyo Koho JP 2003295444 A2 20031015, 31 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-296564 20021009. PRIORITY: US 2001-PV327800 20011009.

AB The invention relates to a **photoresist** compn. contg. a photoactive component and a polymer which has an alicyclic unit and a photoacid-labile acetal unit. The polymer provides effective imaging by sub-300 nm and sub-200 nm light.

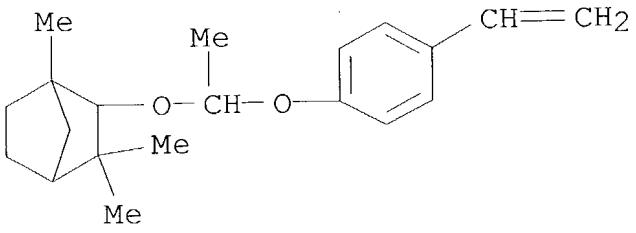
IT **612835-42-4**
(acetal polymer in chem. amplified pos.-working **photoresist** compn.)

RN 612835-42-4 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 1-[1-(1,1-dimethylethoxy)ethoxy]-4-ethenylbenzene, 4-ethenylphenol and 2-[1-(4-ethenylphenoxy)ethoxy]-1,3,3-trimethylbicyclo[2.2.1]heptane (9CI) (CA INDEX NAME)

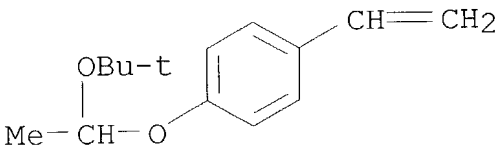
CM 1

CRN 612835-41-3
CMF C20 H28 O2



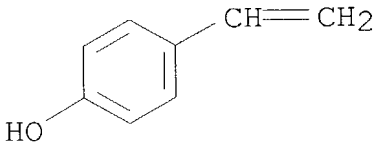
CM 2

CRN 169811-45-4
CMF C14 H20 O2



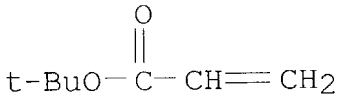
CM 3

CRN 2628-17-3
CMF C8 H8 O



CM 4

CRN 1663-39-4
CMF C7 H12 O2

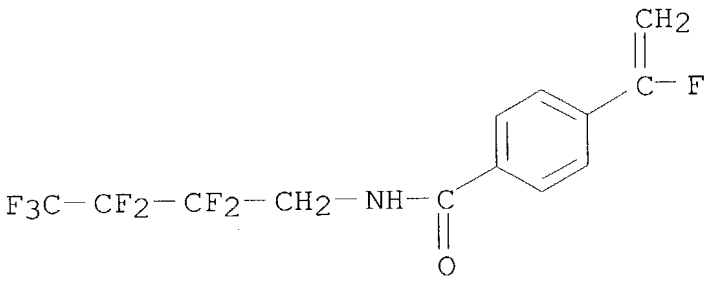


IC ICM G03F007-039
ICS C08F216-38; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35
ST chem amplified pos **photoresist** compn acetal polymer
IT **Light-sensitive** materials
Positive **photoresists**
(chem. amplified pos.-working **photoresist** compn. contg. specific acetal polymer)
IT **612835-42-4**
(acetal polymer in chem. amplified pos.-working **photoresist** compn.)

L22 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN
2003:674155 Document No. 139:205041 Positive **photoresists** showing superior transparency to F2 excimer laser **light** and high **sensitivity**. Sasaki, Tomoya (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003241380 A2 20030827, 80 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-46283 20020222.
AB The **photoresists**, useful for semiconductor manufg. under sub-quarter-micron design rules, comprise (A) polymers increasing alkali soly. upon acid action and having unit CR1R2CR3(C6H4L1XNHR4) (R1-R3 = H, Cl, CN, Me, F, fluoroalkyl, where ≥1 of them is F or fluoroalkyl; L1 = single bond or bivalent bridging group; X = CO, SO2; R4 = H, monovalent org. group) and (B) radiation-sensitive acid generators.
IT **586363-82-8P**
(binder polymers; chem. amplified pos. **photoresists** contg. amido- and fluorine-bearing binder polymers of high transparency to F2 excimer lasers)
RN 586363-82-8 HCAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-(1-fluoroethenyl)-N-(2,2,3,3,4,4,4-heptafluorobutyl)benzamide (9CI) (CA INDEX NAME)

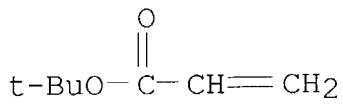
CM 1

CRN 586363-81-7
CMF C13 H9 F8 N O



CM 2

CRN 1663-39-4
CMF C7 H12 O2



IC ICM G03F007-039
ICS H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

ST amplified pos **photoresist** fluorine laser transparency sensitivity; sulfonamido substituted arom binder **photoresist** laser transparency; fluorine fluoroalkyl substituted acid labile **photoresist** binder

IT Positive **photoresists**
(chem. amplified; chem. amplified pos. **photoresists** contg. amido- and fluorine-bearing binder polymers of high transparency to F2 excimer lasers)

IT 144317-44-2, Triphenylsulfonium nonafluorobutanesulfonate
(acid generators; chem. amplified pos. **photoresists** contg. amido- and fluorine-bearing binder polymers of high transparency to F2 excimer lasers)

IT 1663-39-4DP, tert-Butyl acrylate, polymers with fluoromethylphenylfluorostyrylsulfonamide 326591-95-1DP, polymers with fluoromethylphenylfluorostyrylsulfonamide 586363-79-3P 586363-80-6P **586363-82-8P** 586363-83-9P 586363-85-1P 586363-87-3P 586363-88-4DP, methoxymethylated, polymers with acid-labile monomers 586363-89-5P 586363-90-8P
(binder polymers; chem. amplified pos. **photoresists** contg. amido- and fluorine-bearing binder polymers of high

transparency to F2 excimer lasers)

IT 75-04-7, Ethylamine, reactions 753-90-2, 2,2,2-Trifluoroethylamine 586363-91-9 586363-92-0
(in monomer synthesis; chem. amplified pos. **photoresists** contg. amido- and fluorine-bearing binder polymers of high transparency to F2 excimer lasers)

L22 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN
2003:671499 Document No. 139:205039 Positive **photoresists** showing superior transparency to 157-nm excimer laser **light** and high **sensitivity.** Sasaki, Tomoya; Mizutani, Kazuyoshi; Kanna, Shinichi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003241382 A2 20030827, 39 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-46285 20020222.

AB The **photoresists,** suited for F2 excimer laser lithog., comprise (A) polymers increasing alkali soly. upon acid action and having repeating unit XNHR1 (R1 = F-contg. monovalent org. group; X = CO, SO2) and (B) radiation-sensitive acid generators.

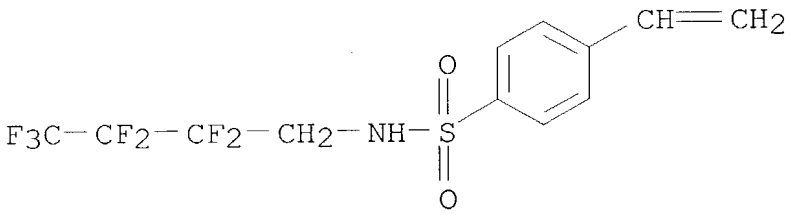
IT **586395-18-8P**
(binder polymers; chem. amplified pos. **photoresists** contg. F-substituted acrylamide polymers and showing high transparency to 157-nm light)

RN 586395-18-8 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenyl-N-(2,2,3,3,4,4,4-heptafluorobutyl)benzenesulfonamide (9CI) (CA INDEX NAME)

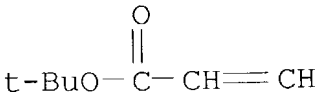
CM 1

CRN 586395-17-7
CMF C12 H10 F7 N O2 S



CM 2

CRN 1663-39-4
CMF C7 H12 O2



IC ICM G03F007-039
ICS H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST amplified pos **photoresist** fluorine laser transparency sensitivity; fluoroethylacrylamide butoxystyrene acid labile **photoresist** binder
IT Positive **photoresists**
(chem. amplified pos. **photoresists** contg. F-substituted acrylamide polymers and showing high transparency to 157-nm light)
IT 144317-44-2, Triphenylsulfonium nonafluorobutanesulfonate
(acid generators; chem. amplified pos. **photoresists** contg. F-substituted acrylamide polymers and showing high transparency to 157-nm light)
IT 586395-00-8P 586395-02-0P 586395-05-3P 586395-07-5P
586395-10-0P 586395-11-1P 586395-13-3P 586395-15-5P
586395-18-8P 586395-20-2P
(binder polymers; chem. amplified pos. **photoresists** contg. F-substituted acrylamide polymers and showing high transparency to 157-nm light)
IT 407-46-5P 586394-98-1P
(chem. amplified pos. **photoresists** contg. F-substituted acrylamide polymers and showing high transparency to 157-nm light)
IT 753-90-2, 2,2,2-Trifluoroethylamine 814-68-6, 2-Propenoyl chloride 1075-49-6, p-Vinylbenzoic acid 5509-65-9, 2,6-Difluoroaniline
(in monomer synthesis; chem. amplified pos. **photoresists** contg. F-substituted acrylamide polymers and showing high transparency to 157-nm light)

L22 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN
2003:512118 Document No. 139:86096 Photosensitive polymers having high transmittance and improved dry etching resistance and chemically amplified **resist** compositions containing the same. Choi, Sang-jun; Moon, Joo-tae; Woo, Sang-gyun; Yoon, Kwang-sub; Song, Ki-yong (Sumsung Electronics Co., Ltd., S. Korea). U.S. Pat. Appl. Publ. US 2003125511 A1 20030703, 9 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-289108 20021105. PRIORITY: KR 2001-69228 20011107.
AB The photosensitive polymer with wt. av. mol. wt. 3,000-50,000, useful for fabrication of semiconductors, contains a repeating unit

-[CH2C(R1)(COOR2)]- (R1 = H, Me; and R2 = fluorinated ethylene glycol group having 3-10 carbon atoms). Thus, a **resist** compn. comprised 1.0 g copolymer of tert-Bu methacrylate and 1,1-dihydro-3,6-dioxaperfluoroheptyl methacrylate (prepd. by reaction of methacryloyl chloride and fluorinated diethylene glycol monomethyl ether), 8 g polyethylene glycol Me ether acetate, 0.02 g triphenylsulfonium triflate and 2 mg triisobutylamine.

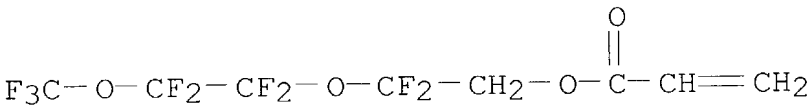
IT **552886-63-2P**
(prepn. of photosensitive polymers having high transmittance and improved dry etching resistance for chem. amplified **resist** compns.)

RN 552886-63-2 HCAPLUS

CN 2-Propenoic acid, 2,2-difluoro-2-[1,1,2,2-tetrafluoro-2-(trifluoromethoxy)ethoxy]ethyl ester, polymer with 1,1-dimethylethyl 2-propenoate and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

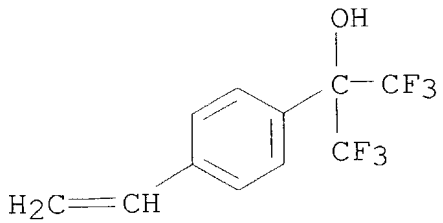
CM 1

CRN 129905-78-8
CMF C8 H5 F9 O4



CM 2

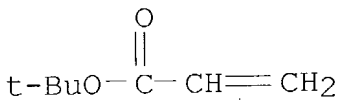
CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

CRN 1663-39-4

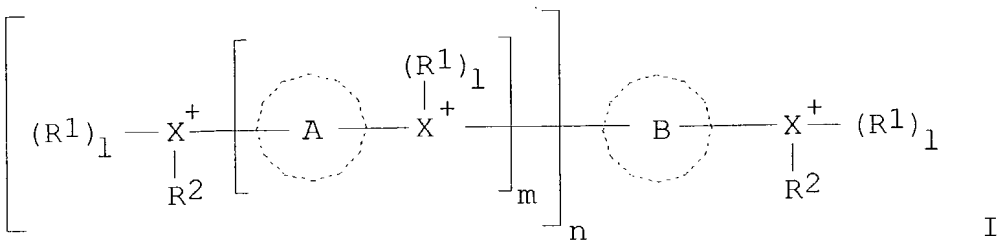
CMF C7 H12 O2



IC ICM C08G073-24
ICS C08F114-18; C08F014-18
NCL 528401000; 528271000; 525242000; 525276000; 525326200; 525330700
CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 74, 76
ST dihydrodioxaperfluoroheptyl methacrylate polymer photosensitive prepn **resist**
IT **Light-sensitive** materials
Photoresists
(prepn. of photosensitive polymers having high transmittance and improved dry etching resistance for chem. amplified **resist** compns.)
IT 129888-38-6P 129905-78-8P 131742-39-7P 131755-30-1P
(prepn. of photosensitive polymers having high transmittance and improved dry etching resistance for chem. amplified **resist** compns.)
IT 552886-60-9P 552886-61-0P 552886-62-1P **552886-63-2P**
552886-64-3P 552886-65-4P 552886-66-5P
(prepn. of photosensitive polymers having high transmittance and improved dry etching resistance for chem. amplified **resist** compns.)
IT 814-68-6, 2-Propenoyl chloride 920-46-7 147492-57-7
330562-43-1
(starting material; prepn. of photosensitive polymers having high transmittance and improved dry etching resistance for chem. amplified **resist** compns.)

=> d l23 1-36 cbib abs hitstr hitind

L23 ANSWER 1 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2004:18781 Document No. 140:84637 **Resist** composition.
Takahashi, Hyou; Yasunami, Shoichiro; Mizutani, Kazuyoshi (Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2004005513 A1 20040108, 47 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-606845 20030627. PRIORITY: JP 2002-190581 20020628.
GI



I

AB The **resist** compn. of the present invention, ensuring excellent pattern profile and excellent isolation performance for use in the pattern formation by the irradn. of actinic rays or radiation, particularly, electron beam, X ray or EUV light, which comprising (A) a compd. having a specific partial structure represented by I [X = sulfur atom, iodine atom; R1, R2 = alkyl, aryl; A, B = hydrocarbon structure; l = 0, 1; m = 0-10; n = 1-5] and a counter ion, the compd. generating an acid upon irradn. of actinic rays or radiation, (B) an alkali-sol. resin, and (C) a crosslinking agent of undergoing an addnl. reaction with the alkali-sol. resin.

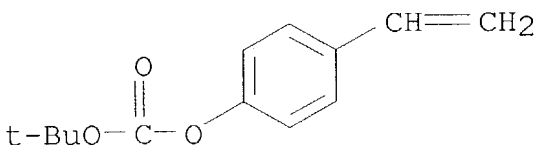
IT **610301-50-3**
(acid decomposable resin; **resist** compn. showing excellent pattern profile and isolation performance)

RN 610301-50-3 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 1,1-dimethylethyl 4-ethenylphenyl carbonate and 4-ethenylphenol (9CI) (CA INDEX NAME)

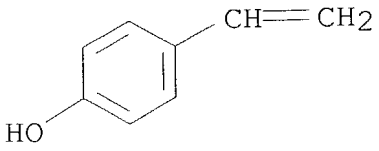
CM 1

CRN 87188-51-0
CMF C13 H16 O3



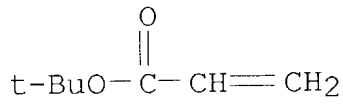
CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

CRN 1663-39-4
CMF C7 H12 O2



IC ICM G03C001-492
ICS G03C001-494; G03C001-76
NCL 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76
ST **resist** compn acid generator **photoresist** electron beam x ray
IT **Photoresists**
(UV; **resist** compn. showing excellent pattern profile and isolation performance)
IT Electron beam **resists**
X-ray **resists**
(**resist** compn. showing excellent pattern profile and isolation performance)
IT 326591-96-2P
(acid decomposable resin; **resist** compn. showing excellent pattern profile and isolation performance)
IT 129674-22-2 158593-28-3 159296-87-4 177034-75-2 200808-68-0
279244-37-0 288620-13-3 372968-15-5 **610301-50-3**
(acid decomposable resin; **resist** compn. showing excellent pattern profile and isolation performance)
IT 144767-83-9P
(acid generator; **resist** compn. showing excellent pattern profile and isolation performance)
IT 100093-00-3 641638-14-4 641638-15-5 641638-16-6 641638-17-7
641638-19-9 641638-21-3 641638-23-5 641638-24-6 641638-26-8
641638-27-9 641638-28-0 641638-30-4 641638-32-6
(acid generator; **resist** compn. showing excellent pattern profile and isolation performance)

IT 173786-80-6P, 4-Acetoxystyrene-4-methoxystyrene copolymer
(alkali-sol. resin; **resist** compn. showing excellent pattern profile and isolation performance)
IT 24979-69-9 24979-70-2 24979-73-5 24979-74-6 149614-53-9 171429-59-7 185405-14-5 204065-67-8 219838-71-8 321164-59-4 345212-27-3 345212-59-1 349619-68-7 354589-43-8 396098-38-7 473313-52-9 575464-71-0
(alkali-sol. resin; **resist** compn. showing excellent pattern profile and isolation performance)
IT 161679-94-3P 185502-14-1P 185502-15-2P 197087-74-4P
(crosslinking agent for **resist** compn. showing excellent pattern profile and isolation performance)
IT 3089-11-0
(crosslinking agent for **resist** compn. showing excellent pattern profile and isolation performance)
IT 102-82-9, Tri-n-butylamine 484-47-9, 2,4,5-Triphenylimidazole 1122-58-3, 4-Dimethylaminopyridine 3001-72-7, 1,5-Diazabicyclo(4.3.0)non-5-ene
(nitrogen-contg. basic compd. for **resist** compn. showing excellent pattern profile and isolation performance)
IT 71-43-2, Benzene, reactions 139-66-2, Diphenylsulfide 536-80-1, Iodosyl benzene 1493-13-6, Trifluoromethanesulfonic acid
(prepn. of acid generator for **resist** compn. showing excellent pattern profile and isolation performance)
IT 138996-14-2P
(prepn. of acid generator for **resist** compn. showing excellent pattern profile and isolation performance)
IT 50-00-0, Formalin, reactions 141-78-6, Ethyl acetate, reactions 110726-28-8, Trisp-PA 161679-95-4 161679-98-7 197087-73-3
(prepn. of crosslinking agent for **resist** compn. showing excellent pattern profile and isolation performance)
IT 162846-57-3P
(prepn. of crosslinking agent for **resist** compn. showing excellent pattern profile and isolation performance)

L23 ANSWER 2 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2004:5239 Document No. 140:67635 Photosensitive resin composition. Kanna, Shinichi; Mizutani, Kazuyoshi; Sasaki, Tomoya (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1376232 A1 20040102, 136 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2003-12226 20030606. PRIORITY: JP 2002-167393 20020607; JP 2002-181384 20020621; JP 2002-181588 20020621.
AB The photosensitive resin compn. of the present invention is an excellent photosensitive resin compn.: exhibiting significant transmissibility at the use of an exposure light source of 160 nm or less, more specifically F2 excimer laser light , where line edge

roughness and development time dependence are small and a problem of footing formation is improved; and comprising a resin which decomps. by an action of acid to increase the soly. in alkali developer, in which the resin contains a specific repeat unit; a compd. capable of generating an acid upon irradn. with one of an actinic ray and a radiation.

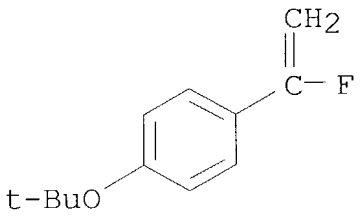
IT **485390-49-6P 485390-57-6P 485390-66-7P**
485390-68-9P 485390-69-0P 500212-79-3P
637351-25-8P 637351-28-1P 637351-48-5P
(microlithog. photosensitive resin compn. contg.)

RN 485390-49-6 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylethoxy)-4-(1-fluoroethenyl)benzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

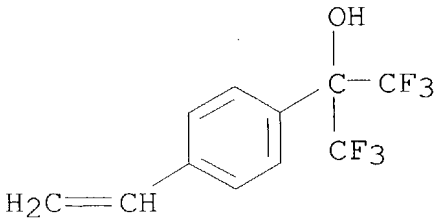
CM 1

CRN 485390-48-5
CMF C12 H15 F O



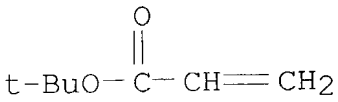
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

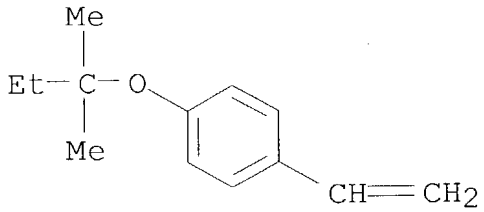
CRN 1663-39-4
CMF C7 H12 O2



RN 485390-57-6 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylpropoxy)-4-ethenylbenzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

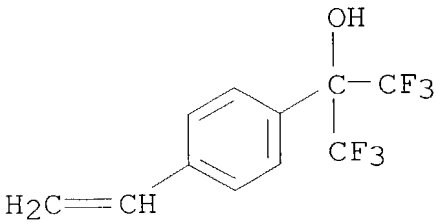
CM 1

CRN 146716-59-8
CMF C13 H18 O



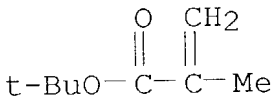
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

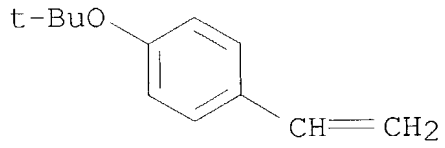
CRN 585-07-9
CMF C8 H14 O2



RN 485390-66-7 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene, 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 4-(1-methylethenyl)phenol (9CI) (CA INDEX NAME)

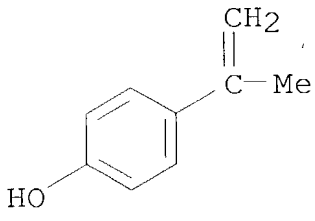
CM 1

CRN 95418-58-9
CMF C12 H16 O



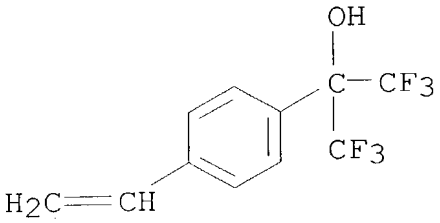
CM 2

CRN 4286-23-1
CMF C9 H10 O



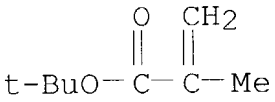
CM 3

CRN 2386-82-5
CMF C11 H8 F6 O



CM 4

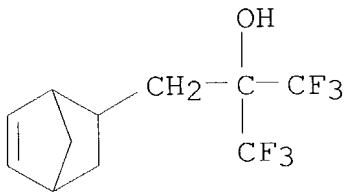
CRN 585-07-9
CMF C8 H14 O2



RN 485390-68-9 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol, 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

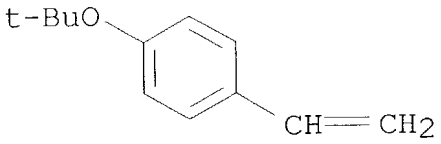
CM 1

CRN 196314-61-1
CMF C11 H12 F6 O



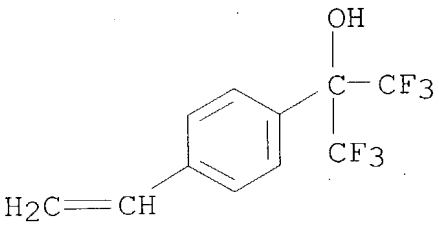
CM 2

CRN 95418-58-9
CMF C12 H16 O



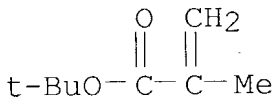
CM 3

CRN 2386-82-5
CMF C11 H8 F6 O



CM 4

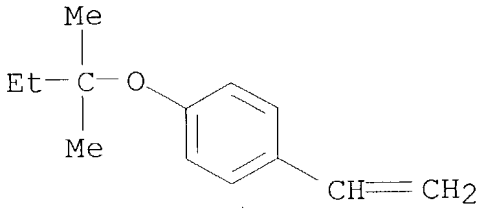
CRN 585-07-9
CMF C8 H14 O2



RN 485390-69-0 HCAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylpropoxy)-4-ethenylbenzene, 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 2-methyl-2-propenenitrile (9CI) (CA INDEX NAME)

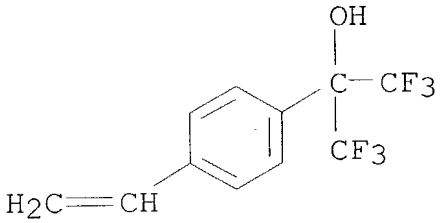
CM 1

CRN 146716-59-8
CMF C13 H18 O



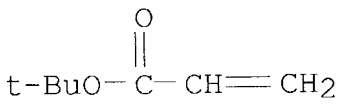
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



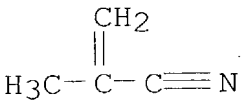
CM 3

CRN 1663-39-4
CMF C7 H12 O2



CM 4

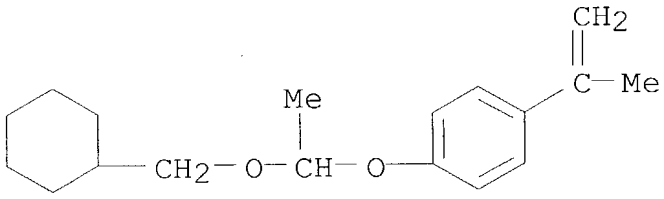
CRN 126-98-7
CMF C4 H5 N



RN 500212-79-3 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-[1-(cyclohexylmethoxy)ethoxy]-4-(1-methylethenyl)benzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

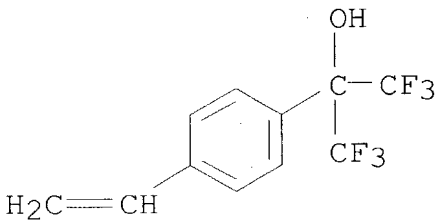
CM 1

CRN 500212-78-2
CMF C18 H26 O2



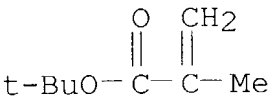
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

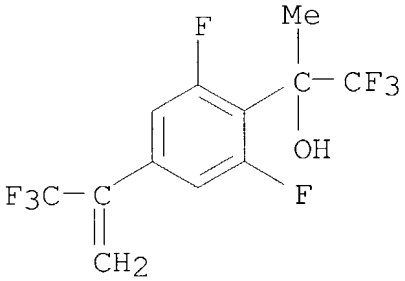
CRN 585-07-9
CMF C8 H14 O2



RN 637351-25-8 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 2,6-difluoro-α-methyl-α-(trifluoromethyl)-4-[1-(trifluoromethyl)ethenyl]benzenemethanol and 1-[1-(4-ethenylphenoxy)-1-methylethyl]tricyclo[3.3.1.13,7]decane (9CI) (CA INDEX NAME)

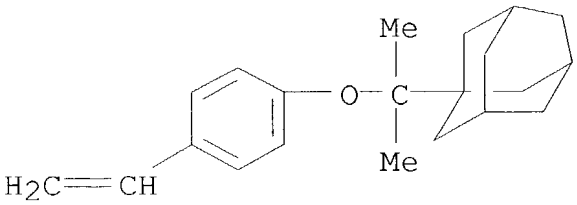
CM 1

CRN 637351-24-7
CMF C12 H8 F8 O



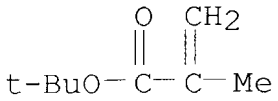
CM 2

CRN 430437-25-5
CMF C21 H28 O



CM 3

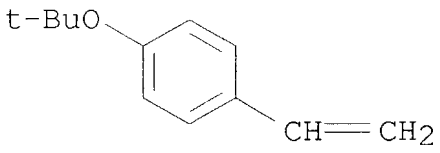
CRN 585-07-9
CMF C8 H14 O2



RN 637351-28-1 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene, 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 2-propenenitrile (9CI) (CA INDEX NAME)

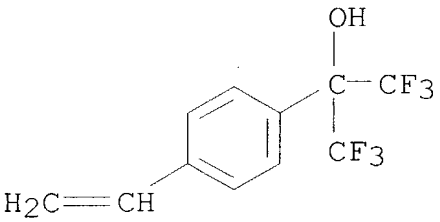
CM 1

CRN 95418-58-9
CMF C12 H16 O



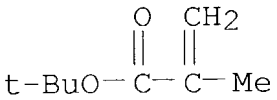
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

CRN 585-07-9
CMF C8 H14 O2



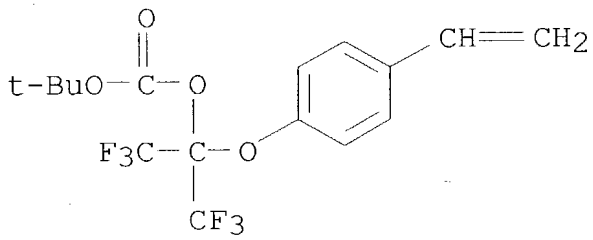
CM 4

CRN 107-13-1
CMF C3 H3 N

RN 637351-48-5 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene, 1,1-dimethylethyl 1-(4-ethenylphenoxy)-2,2,2-trifluoro-1-(trifluoromethyl)ethyl carbonate and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

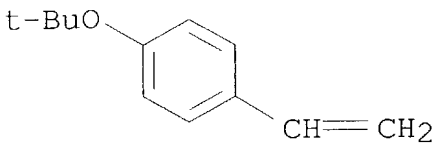
CM 1

CRN 637351-34-9
CMF C16 H16 F6 O4



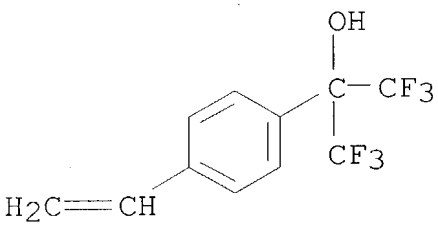
CM 2

CRN 95418-58-9
CMF C12 H16 O



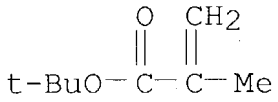
CM 3

CRN 2386-82-5
CMF C11 H8 F6 O



CM 4

CRN 585-07-9
CMF C8 H14 O2



IC ICM G03F007-039
ICS G03F007-004
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38, 76
ST **photoresist** photosensitive resin microlithog
IT Lithography
Photoresists
(photosensitive resin compn.)
IT 367522-49-4P 370102-83-3P 485390-41-8P 485390-42-9P
485390-43-0P 485390-45-2P 485390-46-3P 485390-47-4P
485390-49-6P 485390-52-1P **485390-57-6P**

485390-58-7P 485390-62-3P 485390-65-6P **485390-66-7P**
485390-68-9P 485390-69-0P 500212-79-3P
500212-80-6P 518027-87-7P 629648-90-4P 637351-23-6P
637351-25-8P 637351-26-9P 637351-27-0P
637351-28-1P 637351-29-2P 637351-30-5P 637351-31-6P
637351-32-7P 637351-33-8P 637351-35-0P 637351-36-1P
637351-37-2P 637351-38-3P 637351-39-4P 637351-40-7P
637351-41-8P 637351-42-9P 637351-43-0P 637351-44-1P
637351-45-2P 637351-46-3P 637351-47-4P **637351-48-5P**
637351-49-6P 637351-51-0P 637351-53-2P 637351-55-4P
637351-57-6P 637351-58-7P
(microlithog. photosensitive resin compn. contg.)

L23 ANSWER 3 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2003:945845 Document No. 140:21261 Photosensitive resin composition for photolithography. Kanna, Shinichi; Mizutani, Kazuyoshi; Sasaki, Tomoya (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003344994 A2 20031203, 71 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-154391 20020528.

AB The compn. contains (A) a polymer with repeating unit R50R51R52CC(OR40)CR53R54R55 [R50-55 = H, F, (substituted) alkyl; ≥1 of R50-55 is F or F-substituted alkyl; R40 = H, (substituted) (cyclo)alkyl, (substituted) acyl, (substituted) alkoxycarbonyl, CR41R42(OR43); R41-42 = H, (substituted) (cyclo)alkyl; R43 = (substituted) (cyclo)alkyl, (substituted) aralkyl, (substituted) aryl; 2 of R41-43 may bond to form a ring], which decomps. by the action of acid and increases its soly. to alkali developer, (B) a compd. generating acid by irradn. of actinic ray, and (C) a solvent having ≥1 F in a mol. The compn. shows good solvent soly., coatability, improved line edge roughness, and without striation, and is useful for photolithog. in manuf. of large-scaled integrates, etc.

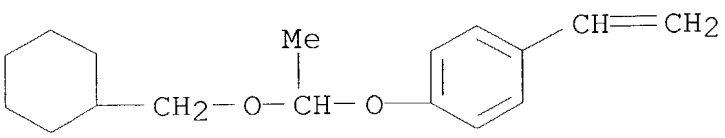
IT **485390-44-1 485390-49-6**
(**photoresist** compn. contg. acid-decomposable polymer, acid generator, and F-contg. solvent)

RN 485390-44-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-[1-(cyclohexylmethoxy)ethoxy]-4-ethenylbenzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

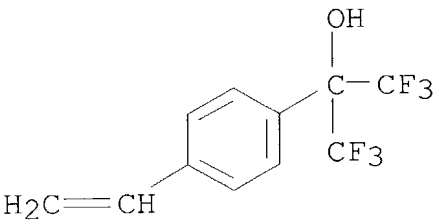
CM 1

CRN 430437-16-4
CMF C17 H24 O2



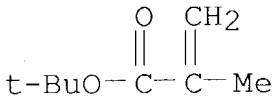
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

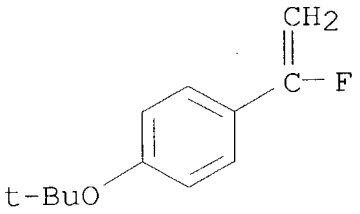
CRN 585-07-9
CMF C8 H14 O2



RN 485390-49-6 HCAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylethoxy)-4-(1-fluoroethenyl)benzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

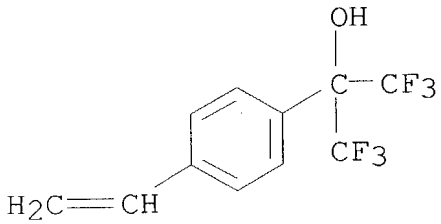
CM 1

CRN 485390-48-5
CMF C12 H15 F O



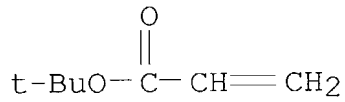
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

CRN 1663-39-4
CMF C7 H12 O2



IC ICM G03F007-004
ICS G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST **photoresist** fluoro solvent photolithog; fluoro polymer acid generator **photoresist**
IT Photolithography
Photoresists
(**photoresist** compn. contg. acid-decomposable polymer, acid generator, and F-contg. solvent)

IT 144317-44-2P, Triphenylsulfonium nonafluorobutanesulfonate
430437-18-6P 485390-42-9P 607710-77-0P
(**photoresist** compn. contg. acid-decomposable polymer, acid generator, and F-contg. solvent)

IT 1511-10-0, Triphenylsulfonium trifluoroacetate 19600-49-8, Triphenylsulfonium acetate 143336-94-1 153698-46-5, Triphenylsulfonium pentafluorobenzenesulfonate 187082-74-2
241806-75-7 338445-29-7 365971-70-6 365971-71-7 367522-49-4
422508-63-2 444617-77-0 444617-78-1 485390-41-8
485390-44-1 485390-45-2 485390-46-3 485390-47-4
485390-49-6 485390-52-1 485390-55-4 485390-58-7
485390-60-1 485390-62-3 485390-63-4 485390-65-6 500212-80-6
500212-90-8 518027-87-7 629648-89-1 629648-90-4 629648-92-6
629648-93-7 629648-94-8 629648-95-9 629648-97-1 629648-99-3
629649-01-0 629649-02-1 629649-03-2 629649-04-3
(**photoresist** compn. contg. acid-decomposable polymer, acid generator, and F-contg. solvent)

IT 97-64-3, Ethyl lactate 321-28-8, 2-Fluoroanisole 371-26-6, Ethyl 4,4,4-trifluorobutyrate 1320-67-8, Propylene glycol monomethylether 84540-57-8, Propylene glycol monomethylether acetate 91600-33-8 143484-00-8 629649-86-1
(solvent; **photoresist** compn. contg. acid-decomposable polymer, acid generator, and F-contg. solvent)

L23 ANSWER 4 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2003:817583 Document No. 139:314532 Radiation sensitive composition and compound. Kodama, Kunihiko (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1353225 A2 20031015, 99 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2003-7989 20030410. PRIORITY: JP 2002-108104 20020410; JP 2002-240661 20020821.

AB The present invention relates to a stimulation sensitive compn. used for a semiconductor prodn. process such as IC, a liq. crystal, the prodn. of a circuit substrate such as a thermal head, further, other photo application system, lithog. printing, an acid curing compn., a radical curing compn. and the like. The present invention relates to a stimulation sensitive compn. comprising: (A) a compd. represented by: ArC(=O)CR6R7S+Y1Y2 X- (Ar = aryl or arom. group contg. a hetero atom; R6 = H, cyano, alkyl, aryl group; R7 = monovalent org. group; Y1,2 = alkyl, aryl, aralkyl, etc.; X- = non-nucleophilic anion) which is capable of generating an acid or a radical by stimulation from the external. (B) a resin.

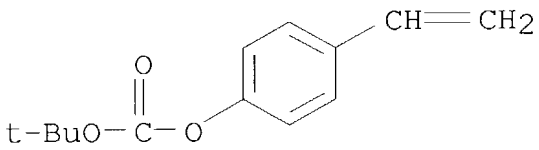
IT **610301-50-3**
(radiation sensitive **resist** compn. for semiconductor prodn. process contg.)

RN 610301-50-3 HCAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with

1,1-dimethylethyl 4-ethenylphenyl carbonate and 4-ethenylphenol (9CI) (CA INDEX NAME)

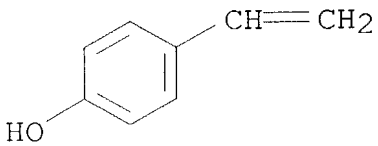
CM 1

CRN 87188-51-0
CMF C13 H16 O3



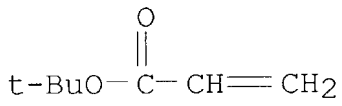
CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

CRN 1663-39-4
CMF C7 H12 O2



IC ICM G03F007-004
ICS G03F007-039; G03F007-038; C07C323-22
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST lithog printing radiation sensitive **resist** compn
IT Lithography
(radiation sensitive **resist** compn. for semiconductor

prodn. process)

IT **Resists**
(radiation-sensitive; radiation sensitive compn. and compd. for)

IT 470482-89-4P 610301-07-0P
(acid generating agent; radiation sensitive **resist** compn. for semiconductor prodn. process contg.)

IT 66003-78-9 133710-62-0 138529-81-4 144317-44-2 193345-23-2
197447-16-8 220475-58-1 227199-92-0 241806-75-7 258341-98-9
258872-05-8 284474-28-8 301153-77-5 301664-71-1 301664-72-2
347193-28-6 389859-76-1 391232-40-9 398141-17-8 398141-18-9
398141-19-0 474510-76-4 592544-87-1 610301-08-1 610301-09-2
610301-10-5 610301-12-7 610301-13-8 610301-14-9 610301-16-1
610301-18-3 610301-19-4 610301-21-8 610301-23-0 610301-25-2
610301-26-3 610301-28-5 610301-30-9 610301-32-1 610301-34-3
610301-36-5 610301-38-7 610301-40-1 610301-42-3 610301-44-5
610301-46-7 610301-47-8 610301-48-9
(acid generating agent; radiation sensitive **resist** compn. for semiconductor prodn. process contg.)

IT 75-77-4, Chlorotrimethylsilane, reactions 513-36-0 827-52-1,
Phenylcyclohexane 1600-44-8, Tetramethylenesulfoxide 2168-93-6,
Dibutylsulfoxide 13547-70-1 20907-24-8
(prepn. of radiation sensitive **resist** compn. for semiconductor prodn. process)

IT 5195-24-4P 56346-00-0P
(prepn. of radiation sensitive **resist** compn. for semiconductor prodn. process)

IT 24979-69-9P 24979-70-2P, VP-5000 143336-94-1P 185405-14-5P
250378-10-0P, Butyrolactone methacrylate-2-Ethyl-2-adamantyl methacrylate copolymer 289623-64-9P 312620-54-5P 321164-59-4P
345212-27-3P 359635-35-1P 370102-83-3P 370866-39-0P
391232-36-3P 391613-77-7P 398140-43-7P 398140-45-9P
398140-57-3P 398140-59-5P 398140-68-6P 398140-69-7P
398140-77-7P 405509-19-5P 406702-00-9P 430437-18-6P
459418-30-5P 471257-28-0P 482609-97-2P 508210-04-6P
515876-73-0P 521303-15-1P 521303-16-2P 524699-47-6P
574735-94-7P 607710-65-6P 607710-66-7P 607710-67-8P
607710-68-9P 607710-69-0P 607710-70-3P 607710-71-4P
607710-72-5P 607710-73-6P 607710-76-9P 607710-77-0P
610300-92-0P 610300-93-1P 610300-94-2P 610300-95-3P
610300-96-4P 610300-97-5P 610300-98-6P 610301-00-3P
610301-01-4P 610301-03-6P 610301-04-7P 610301-05-8P
(radiation sensitive **resist** compn. for semiconductor prodn. process contg.)

IT 129674-22-2 158593-28-3 177034-75-2 200808-68-0 325143-38-2
372968-15-5 610301-49-0 **610301-50-3**
(radiation sensitive **resist** compn. for semiconductor prodn. process contg.)

IT 120-07-0, N-Phenyldiethanolamine 484-47-9, 2,4,5-

Triphenylimidazole 621-77-2, Tripentylamine 1116-76-3, Tri-n-octylamine 1672-63-5, 4-Hydroxyantipyrine 2052-49-5, Tetrabutylammonium hydroxide 3001-72-7, 1,5-Diazabicyclo[4,3,0]non-5-ene 3040-44-6, 1-Piperidineethanol 19293-63-1, Dicyclohexylmethylamine 19600-49-8, Triphenylsulfonium acetate 24544-04-5, 2,6-Diisopropylaniline 70384-51-9
(radiation sensitive **resist** compn. for semiconductor prodn. process contg.)

L23 ANSWER 5 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2003:717781 Document No. 139:237717 Polymer blend and associated methods of preparation and use. Breyta, Gregory; Ito, Hiroshi; Truong, Hoa D. (USA). U.S. Pat. Appl. Publ. US 2003171490 A1 20030911, 20 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-90646 20020304.

AB A polymer blend is provided for use in a lithog. **photoresist** compn., particularly a chem. amplification **photoresist**. In a preferred embodiment, the polymer blend is substantially transparent to deep UV radiation, i.e., radiation of a wavelength less than 250 nm, including wavelengths of 157 nm, 193 nm and 248 nm, and has improved sensitivity and resoln. Processes for prepg. and using the polymer blend are also provided, as are lithog. **photoresist** compns. that contain the polymer blend.

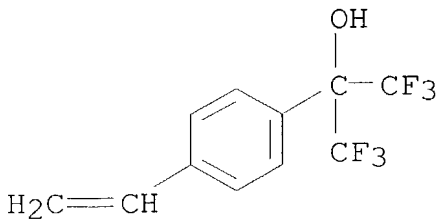
IT **370866-15-2P**
(polymer blend for **photoresist** compn.)

RN 370866-15-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

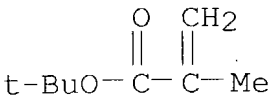
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



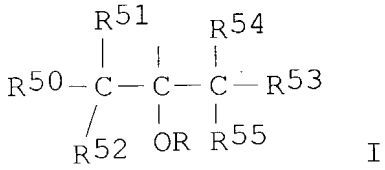
CM 2

CRN 585-07-9
CMF C8 H14 O2



IC ICM G03F007-038
ICS C08L001-00
NCL 525050000; 430270100; 430907000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST **photoresist** polymer blend synthesis lithog
IT **Photoresists**
(polymer blend for **photoresist** compn.)
IT Polymer blends
(polymer blend for **photoresist** compn.)
IT Photolithography
(vacuum UV; polymer blend for **photoresist** compn.)
IT **370866-15-2P** 478623-16-4P 594855-58-0P 594855-59-1P
(polymer blend for **photoresist** compn.)
IT 370102-75-3
(polymer blend for **photoresist** compn.)

L23 ANSWER 6 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2003:693241 Document No. 139:221608 Photosensitive resin composition. Sasaki, Tomoya; Mizutani, Kazuyoshi; Kanna, Shinichi (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1341038 A2 20030903, 115 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2003-4254 20030226. PRIORITY: JP 2002-50031 20020226.
GI



I

AB The photosensitive resin compn. comprises: (A) a resin contg. a repeating unit having at least two groups represented by I (R50-55 =

H, F, alkyl; at least one of R50-55 = F, or an alkyl group is substituted with F; R = H, org. group); and (B) a compd. capable of generating an acid by the action with one of an actinic ray and a radiation. The photosensitive resin compn. is suitable used for the micro-lithog. process such as the manuf. of ULSIs and high capacity microchips and other photo fabrication processes.

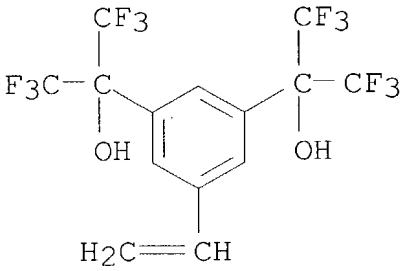
IT **585573-43-9P 585573-45-1P**
(resin; photosensitive resin compn. for **photoresist** contg.)

RN 585573-43-9 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 5-ethenyl-α,α,α',α'-tetrakis(trifluoromethyl)-1,3-benzenedimethanol (9CI) (CA INDEX NAME)

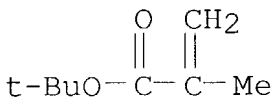
CM 1

CRN 568587-26-8
CMF C14 H8 F12 O2



CM 2

CRN 585-07-9
CMF C8 H14 O2

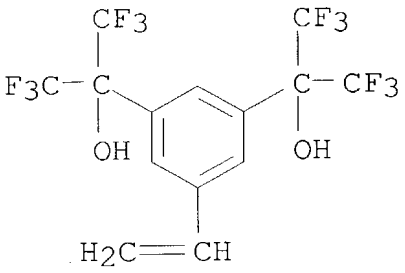


RN 585573-45-1 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 5-ethenyl-α,α,α',α'-tetrakis(trifluoromethyl)-1,3-benzenedimethanol (9CI) (CA INDEX NAME)

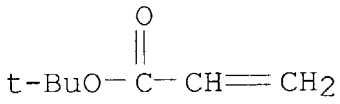
CM 1

CRN 568587-26-8
CMF C14 H8 F12 O2



CM 2

CRN 1663-39-4
CMF C7 H12 O2



IC ICM G03F007-004
ICS G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST **photoresist** photolithog photosensitive resin compn
IT **Photoresists**
Semiconductor device fabrication
(photosensitive resin compn. for)
IT 802-93-7, 1,3-Bis-(2-Hydroxyhexafluoroisopropyl)benzene
(18prepn. of photosensitive resin compn. for **photoresist**
)
IT 107-30-2, Chloromethyl-methyl ether 108-24-7, Acetic anhydride 1826-67-1, Vinyl magnesium bromide 3188-13-4, Chloromethyl-ethyl ether 5292-43-3, tert-Butyl bromoacetate 6674-22-2
(prepn. of photosensitive resin compn. for **photoresist**)
IT 75-07-0P, Acetaldehyde, reactions 501935-24-6P 585569-81-9P 585573-34-8P 585573-35-9P 585573-37-1P 585573-39-3P 585573-41-7P

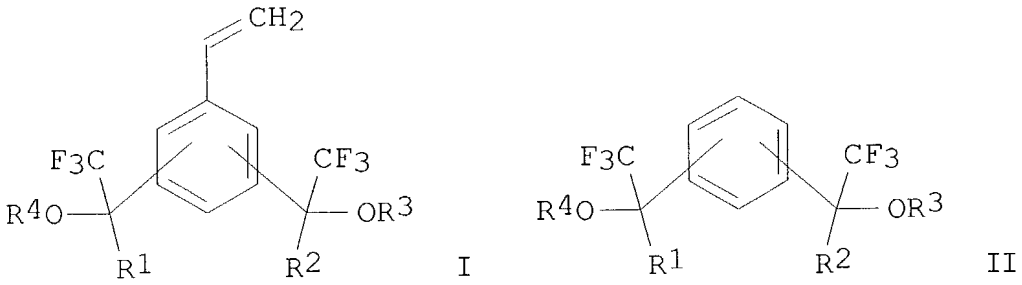
(prepn. of photosensitive resin compn. for **photoresist**)

IT 24424-99-5DP, Di-tert-butyl dicarbonate, reaction product with hydroxyl group contained styrene copolymer
(prepn. of photosensitive resin compn. for **photoresist**)

IT 585569-89-7P 585569-90-0P 585573-42-8P **585573-43-9P**
585573-44-0P **585573-45-1P** 585573-46-2P 585573-48-4P
585573-49-5P 585573-50-8P 585573-51-9DP, reaction product with di-t-Bu dicarbonate 585573-51-9P 585573-53-1P 585573-55-3P
585573-56-4P 585573-57-5P 585573-58-6P 585573-60-0P
585573-61-1P 585573-62-2P 585573-63-3P 585573-64-4P
585573-66-6P 585573-67-7P 585573-68-8P 585573-70-2P
585573-71-3P 585573-73-5P 585573-74-6P 585573-75-7P
585573-76-8P 585578-38-7P 585578-39-8P
(resin; photosensitive resin compn. for **photoresist** contg.)

L23 ANSWER 7 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2003:671118 Document No. 139:205035 Fluorine-containing styrene derivatives and their preparation, macromolecular compounds, antireflection coating materials and chemically amplified **resist** materials. Komoritani, Haruhiko; Tsunoda, Shinichi; Otani, Mitsutaka; Maeda, Kazuhiko (Central Glass Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003238620 A2 20030827, 19 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-125505 20020426. PRIORITY: JP 2001-380776 20011213.

GI



AB The styrene derivs. represented by general formula I (R1, R2 = H, Me, CF3; R3, R4 = H, C1-25 alkyl, fluorinated alkyl, arom. ring-contg. cyclic body, acid-removable group; R3 and R4 may contain O atom or carbonyl bond) are prepd. by reacting benzene derivs. II (R1-R4 = same as in I) with EtBr in the presence of Lewis acid or protonic acid to give ethylbenzene derivs., followed with

bromination in the presence of radical initiator and subsequent thermal decompn. The styrene derivs. will be polymd. or copolymd. with ≥1 of comonomers selected from acrylic acid esters, methacrylic acid esters, F-contg. acrylic acid esters, F-contg. methacrylic acid esters, styrene-based compds. F-contg. styrene-based compds., vinyl ethers, F-contg. vinyl ethers, olefins, F-contg. olefins, norbornenes, or F-contg. norbornenes. The macromol. compds. have high transparency in wide wavelength range, i.e., from vacuum UV to those for optical communication, low refractive index, high adhesion strength to substrates, good film-formability, and etching resistance.

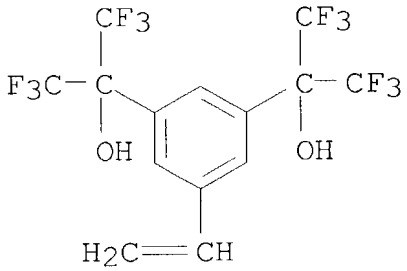
IT **585569-96-6P**
(prepn. of CF3- and HO-substituted styrene derivs. and their macromol. compds., antireflection coatings and chem. amplified **resists**)

RN 585569-96-6 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 5-ethenyl-α,α,α',α'-tetrakis(trifluoromethyl)-1,3-benzenedimethanol and 3,3,3-trifluoro-2-(trifluoromethyl)-1-propene (9CI) (CA INDEX NAME)

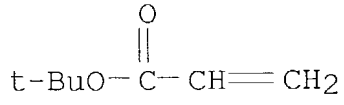
CM 1

CRN 568587-26-8
CMF C14 H8 F12 O2



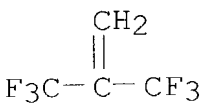
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 382-10-5
CMF C4 H2 F6



IC ICM C08F012-14
ICS C07C029-58; C07C033-48; C07C041-24; C07C043-176; C07C068-00; C07C069-96; G03F007-033; C07B061-00

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 37, 38, 42

ST trifluoromethyl hydroxy substituted styrene deriv prepn; antireflection coating trifluoromethyl hydroxy styrene polymer; chem amplified **resist** trifluoromethyl hydroxy styrene polymer

IT Positive **photoresists**
(DUV **resist**; prepn. of CF3- and HO-substituted styrene derivs. and their macromol. compds., antireflection coatings and chem. amplified **resists**)

IT Antireflective films
(prepn. of CF3- and HO-substituted styrene derivs. and their macromol. compds., antireflection coatings and chem. amplified **resists**)

IT 585569-79-5P 585569-80-8P
(intermediate in monomer prepn.; prepn. of CF3- and HO-substituted styrene derivs. and their macromol. compds., antireflection coatings and chem. amplified **resists**)

IT 74-96-4, Ethyl bromide 802-93-7 7726-95-6, Bromine, reactions
(monomer prepn. from; prepn. of CF3- and HO-substituted styrene derivs. and their macromol. compds., antireflection coatings and chem. amplified **resists**)

IT 568587-26-8P
(prepn. of CF3- and HO-substituted styrene derivs. and their macromol. compds., antireflection coatings and chem. amplified **resists**)

IT 585569-81-9P 585569-83-1P 585569-85-3P 585569-87-5P
585569-88-6P 585569-89-7P 585569-90-0P 585569-91-1P
585569-94-4P 585569-95-5P **585569-96-6P** 585569-97-7P
585569-98-8P 585569-99-9P 585570-00-9P 585571-43-3P
585571-45-5P
(prepn. of CF3- and HO-substituted styrene derivs. and their

macromol. compds., antireflection coatings and chem. amplified **resists**)

L23 ANSWER 8 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2003:470377 Document No. 139:44224 Positive-working **resist** composition containing specific fluorine group-containing resin. Kanna, Shinichi; Mizutani, Kazuyoshi; Kodama, Kunihiko; Sasaki, Tomoya (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1319981 A2 20030618, 80 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2002-27667 20021212. PRIORITY: JP 2001-380104 20011213; JP 2001-380105 20011213.

AB The invention relates to a pos. **resist** compn. comprising (A) a fluorine group-contg. resin, which has a structure substituted with a fluorine atom in the main chain and/or side chain of polymer skeleton and a group that is decompd. by the action of an acid to increase soly. in an alkali developer and (B) an acid generator capable of generating an acid upon irradn. of an actinic ray or radiation, and the acid generator of (B) is a compd. selected from a sulfonium salt contg. no arom. ring and a compd. having a phenacylsulfonium salt structure. The compn. is capable of forming a highly precise pattern using a vacuum UV ray of ≤160 nm such as F2 excimer laser beam as a light source for exposure.

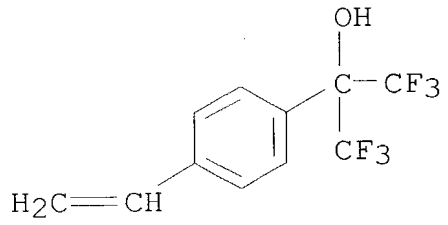
IT **430437-40-4P 540729-55-3P**
(fluorine group-contg. resin)

RN 430437-40-4 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 2-methyl-2-propenenitrile (9CI) (CA INDEX NAME)

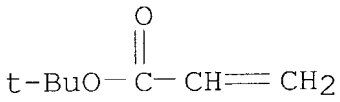
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



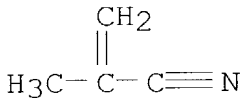
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

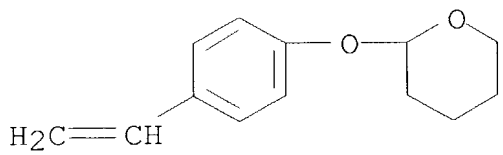
CRN 126-98-7
CMF C4 H5 N



RN 540729-55-3 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol, 2-(4-ethenylphenoxy)tetrahydro-2H-pyran and methoxyethene (9CI) (CA INDEX NAME)

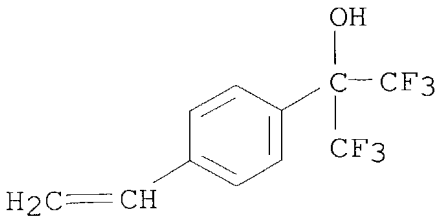
CM 1

CRN 65409-15-6
CMF C13 H16 O2



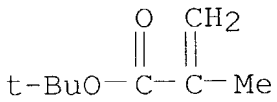
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



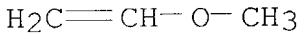
CM 3

CRN 585-07-9
CMF C8 H14 O2



CM 4

CRN 107-25-5
CMF C3 H6 O



IC ICM G03F007-004
ICS G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35
ST pos **resist** compn fluorine resin
IT Positive **photoresists**
(pos.-working **resist** compn.)
IT 262617-13-0P 430436-66-1P 430436-68-3P 430436-72-9P
430436-74-1P 430436-76-3P 430436-78-5P 430436-79-6P
430436-81-0P 430436-84-3P 430436-85-4P 430436-87-6P
430436-90-1P 430436-92-3P 430436-94-5P 430436-99-0P
430437-03-9P 430437-07-3P 430437-12-0P 430437-13-1P
430437-14-2P 430437-15-3P 430437-17-5P 430437-18-6P
430437-19-7P 430437-21-1P 430437-22-2P 430437-29-9P
430437-33-5P 430437-35-7P **430437-40-4P** 431062-12-3P
431062-17-8P 431062-22-5P 462109-80-4P 485390-42-9P

540729-50-8P 540729-51-9P 540729-52-0P 540729-54-2P
540729-55-3P
(fluorine group-contg. resin)

L23 ANSWER 9 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2003:369197 Document No. 138:393073 Positive-working **photoresist** composition containing fluoro-substituted nitrogen compound. Fujimori, Toru; Kanna, Shinichi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003140349 A2 20030514, 53 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-339439 20011105.

AB The compn. contains (A) a polymer with F-substituted main chain or side chain and becomes sol. in alk. developer by the decompn. caused by an acid, (B) a compd. generating acid by actinic ray or radiation, and (C) a nitrogen compd. contg. ≥1 F atom. The compn. gives clear pattern without development defect.

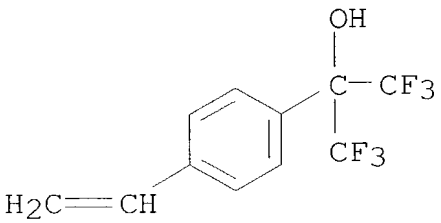
IT **370866-15-2P 430437-40-4P**
(pos. **photoresist** contg. F-contg. alkali-sol. polymer, acid generator, and F-contg. nitrogen compd.)

RN 370866-15-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

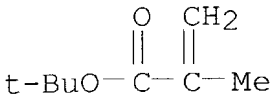
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



CM 2

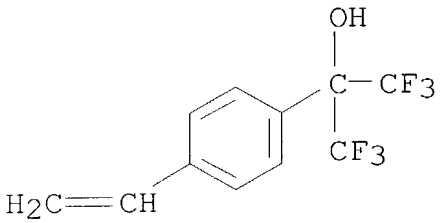
CRN 585-07-9
CMF C8 H14 O2



RN 430437-40-4 HCAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 2-methyl-2-propenenitrile (9CI) (CA INDEX NAME)

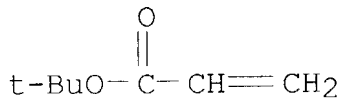
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



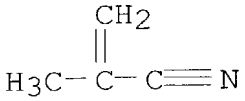
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 126-98-7
CMF C4 H5 N



IC ICM G03F007-039
ICS C08F012-22; C08F014-26; C08F014-28; C08F016-26; C08F016-38; C08F020-22; C08F020-28; C08F020-44; C08F032-04; G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

ST pos **photoresist** fluorine nitrogen compd; alkali soluble polymer fluorine

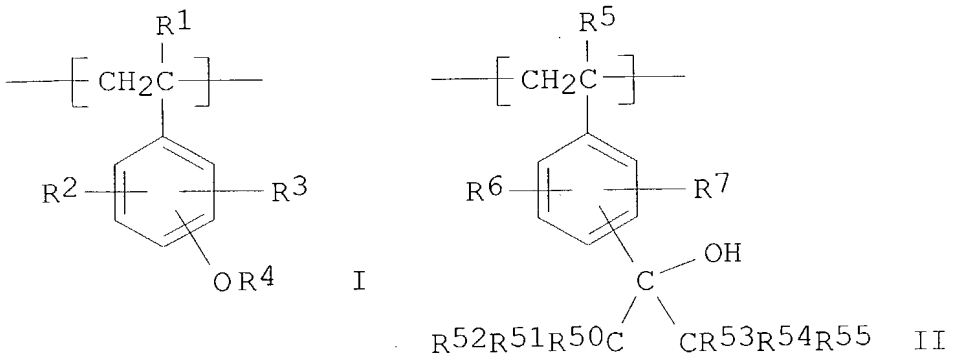
IT Positive **photoresists**
(pos. **photoresist** contg. F-contg. alkali-sol. polymer, acid generator, and F-contg. nitrogen compd.)

IT 88-17-5 98-16-8 311-89-7 328-74-5 359-70-6 367-71-5
393-39-5 432-03-1 432-08-6 455-14-1 700-16-3 700-17-4
771-60-8 1513-65-1 2875-18-5 3048-01-9 3244-44-8 3796-24-5
(pos. **photoresist** contg. F-contg. alkali-sol. polymer, acid generator, and F-contg. nitrogen compd.)

IT 143643-34-9P 262617-13-0P 370866-13-0P **370866-15-2P**
397302-29-3P 430436-67-2P 430436-68-3P 430436-70-7P
430436-72-9P 430436-74-1P 430436-76-3P 430436-78-5P
430436-79-6P 430436-81-0P 430436-82-1P 430436-84-3P
430436-85-4P 430436-86-5P 430436-87-6P 430436-89-8P
430436-90-1P 430436-92-3P 430436-94-5P 430436-98-9P
430436-99-0P 430437-01-7P 430437-03-9P 430437-04-0P
430437-05-1P 430437-09-5P 430437-11-9P 430437-12-0P
430437-13-1P 430437-17-5P 430437-18-6P 430437-19-7P
430437-21-1P 430437-22-2P 430437-24-4P 430437-27-7P
430437-29-9P 430437-33-5P 430437-36-8P 430437-37-9P
430437-39-1P **430437-40-4P** 431062-12-3P 431062-14-5P
431062-16-7P 431062-17-8P 431062-18-9P 431062-20-3P
431062-22-5P 487048-93-1P 524952-65-6P 524952-66-7P
524952-68-9P 524952-69-0P 524952-70-3P 524952-71-4P
524952-72-5P 524952-73-6P 524952-74-7P
(pos. **photoresist** contg. F-contg. alkali-sol. polymer, acid generator, and F-contg. nitrogen compd.)

L23 ANSWER 10 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2003:152372 Document No. 138:212786 Vacuum UV-sensitive resin composition containing ionic compound reactive towards acid. Kanna, Shinichi; Mizutani, Kazuyoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003057826 A2 20030228, 66 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-250535 20010821.

GI



AB The title compn. contains a resin which increases the soly. towards an alkali developer by an acid and has repeating unit I, II, and [CH(R17a)-C(R17)(COOR18)] (R1,5,R17, R17a = H, halo, cyano, alkyl; R2,3,6,7 = H, halo, cyano, hydroxyl, etc.; R50-55 = H, F, alkyl; R4 = -C(R11)(R12)(R13), -C(R14)(R15)(-O-R16); R11-13 = alkyl, cycloalkyl, alkenyl, etc.; R14-15 = H, alkyl; R16 = alkyl, cycloalkyl, aralkyl, aryl; R18 = -C(R18d)(R18e)(R18f), -C(R18d)(R18e)(OR18g); R18d-g = H, alkyl, aralkyl, aryl), an actinic ray- or radiation-sensitive acid generator, ionic compd. B+A2- (A2= anionic part; B = cationic part), a solvent, and a surfactant, wherein the acid (A1H) generated by an acid generator and the ionic compd. follow the reaction equation: A1H + B+A2--> B+A2- + A2H. The compn. shows the good light transmittance towards ≤160 nm light and the decreased dependence on the exposure time and provides the **resist** of the good line edge roughness.

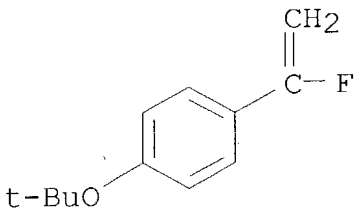
IT **485390-49-6P 485390-56-5P 485390-57-6P**
485390-64-5P 485390-66-7P 485390-69-0P
500212-79-3P 500212-84-0P
(resin; Vacuum UV-sensitive resin compn. contg. ionic compd. reactive towards acid)

RN 485390-49-6 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylethoxy)-4-(1-fluoroethenyl)benzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

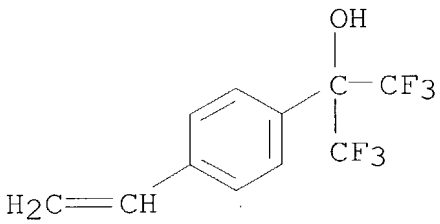
CM 1

CRN 485390-48-5
CMF C12 H15 F O



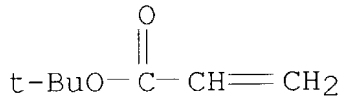
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

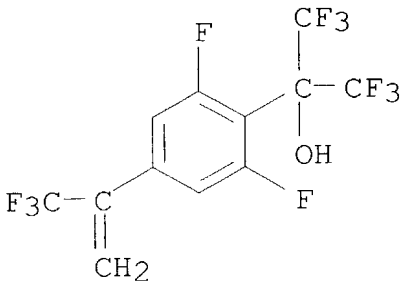
CRN 1663-39-4
CMF C7 H12 O2



RN 485390-56-5 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 2,6-difluoro-α,α-bis(trifluoromethyl)-4-[1-(trifluoromethyl)ethenyl]benzenemethanol and 1-[1-(4-ethenylphenoxy)-1-methylethyl]tricyclo[3.3.1.13,7]decane (9CI) (CA INDEX NAME)

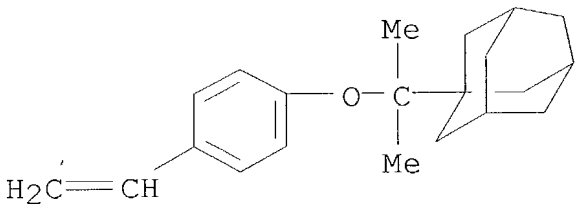
CM 1

CRN 430437-28-8
CMF C12 H5 F11 O



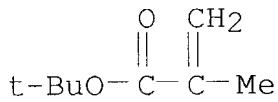
CM 2

CRN 430437-25-5
CMF C21 H28 O



CM 3

CRN 585-07-9
CMF C8 H14 O2

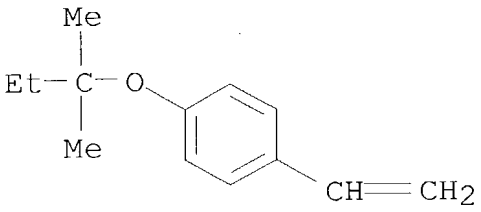


RN 485390-57-6 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylpropoxy)-4-ethenylbenzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

CM 1

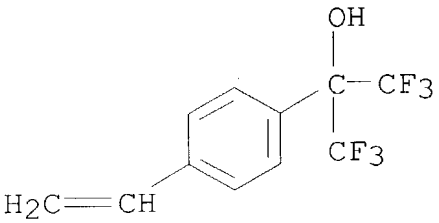
CRN 146716-59-8

CMF C13 H18 O



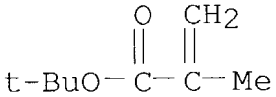
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

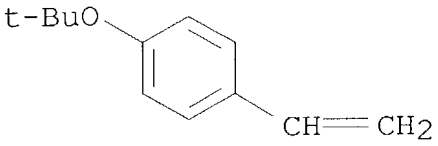
CRN 585-07-9
CMF C8 H14 O2



RN 485390-64-5 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene, 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 2-methyl-2-propenenitrile (9CI) (CA INDEX NAME)

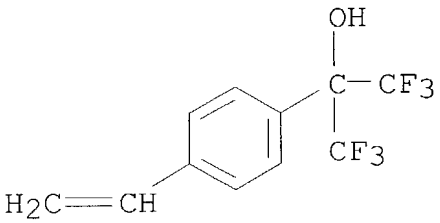
CM 1

CRN 95418-58-9
CMF C12 H16 O



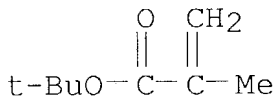
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



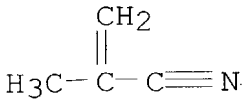
CM 3

CRN 585-07-9
CMF C8 H14 O2



CM 4

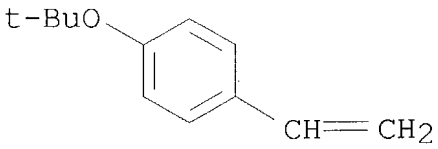
CRN 126-98-7
CMF C4 H5 N



RN 485390-66-7 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene, 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 4-(1-methylethenyl)phenol (9CI) (CA INDEX NAME)

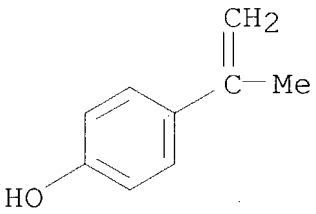
CM 1

CRN 95418-58-9
CMF C12 H16 O



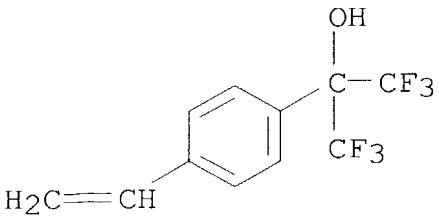
CM 2

CRN 4286-23-1
CMF C9 H10 O



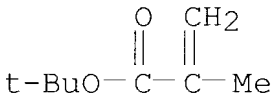
CM 3

CRN 2386-82-5
CMF C11 H8 F6 O



CM 4

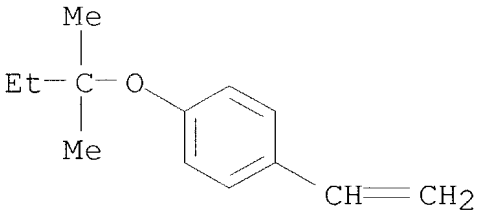
CRN 585-07-9
CMF C8 H14 O2



RN 485390-69-0 HCAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylpropoxy)-4-ethenylbenzene, 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 2-methyl-2-propenenitrile (9CI) (CA INDEX NAME)

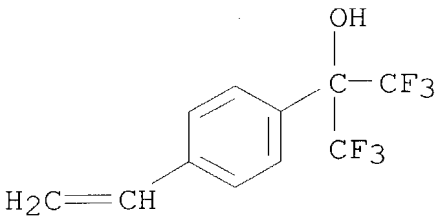
CM 1

CRN 146716-59-8
CMF C13 H18 O



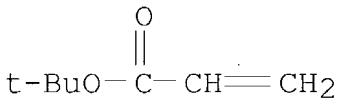
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



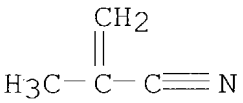
CM 3

CRN 1663-39-4
CMF C7 H12 O2



CM 4

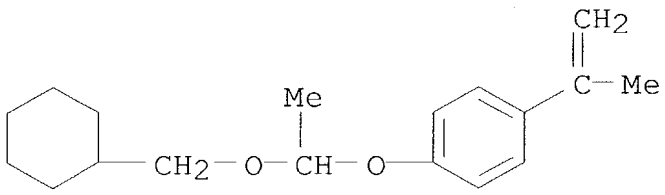
CRN 126-98-7
CMF C4 H5 N



RN 500212-79-3 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-[1-(cyclohexylmethoxy)ethoxy]-4-(1-methylethenyl)benzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

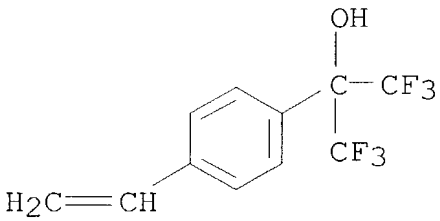
CM 1

CRN 500212-78-2
CMF C18 H26 O2



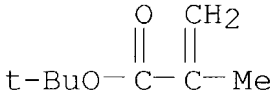
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

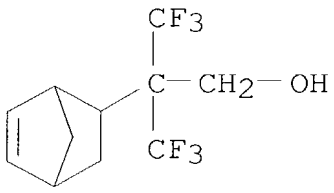
CRN 585-07-9
CMF C8 H14 O2



RN 500212-84-0 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with β,β-bis(trifluoromethyl)bicyclo[2.2.1]hept-2-ene-2-ethanol, 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

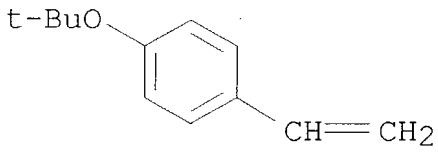
CM 1

CRN 500212-83-9
CMF C11 H12 F6 O



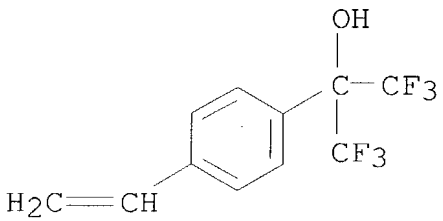
CM 2

CRN 95418-58-9
CMF C12 H16 O



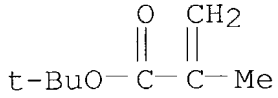
CM 3

CRN 2386-82-5
CMF C11 H8 F6 O



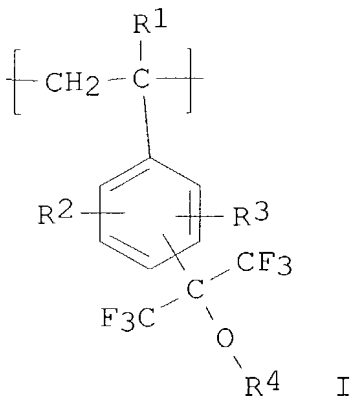
CM 4

CRN 585-07-9
CMF C8 H14 O2



IC ICM G03F007-039
ICS C08F212-14; G03F007-004; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35
IT Positive **photoresists**
(Vacuum UV-sensitive resin compn. contg. ionic compd. reactive towards acid)
IT 485390-41-8P 485390-42-9P 485390-43-0P 485390-45-2P
485390-46-3P 485390-47-4P **485390-49-6P** 485390-52-1P
485390-55-4P **485390-56-5P** **485390-57-6P**
485390-58-7P 485390-60-1P 485390-62-3P 485390-63-4P
485390-64-5P 485390-65-6P **485390-66-7P**
485390-67-8P **485390-69-0P** 485390-70-3P
500212-79-3P 500212-80-6P 500212-82-8P
500212-84-0P 500212-86-2P 500212-87-3P 500212-88-4P
(resin; Vacuum UV-sensitive resin compn. contg. ionic compd. reactive towards acid)

L23 ANSWER 11 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2003:40248 Document No. 138:115049 Chemically amplified positive **photoresist** fluoropolymer compositions with high resolution and transparency to F2 excimer laser beams, and their deposition method. Kanna, Shinichi; Mizutani, Kazuyoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003015301 A2 20030117, 44 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-203565 20010704.
GI



I

AB The compns. comprise (A) fluoropolymers, which increase their alkali-soly. in the presence of acids, having repeating units I (R1 = H, F, alkyl; R2, R3 = H, OH, halo, cyano, alkoxy, aryl, etc.; R4 = H, alkyl, acyl, R5R6COR7, etc.; R5, R6 = H, alkyl, cycloalkyl; R7 = alkyl, cycloalkyl, aralkyl, aryl), (B) photoacid generators, and (C) solvents, wherein the compns. are heated at 110-150° in deposition.

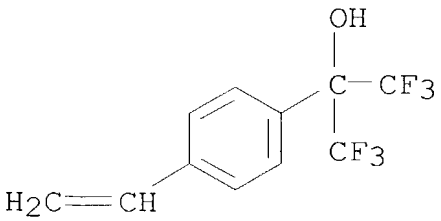
IT **370866-15-2P 487048-88-4P**
(F-contg. styrene polymers for chem. amplified pos. **photoresists** with high resoln. and transparency to F2 excimer laser beams)

RN 370866-15-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

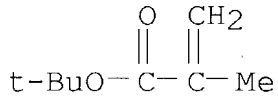
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



CM 2

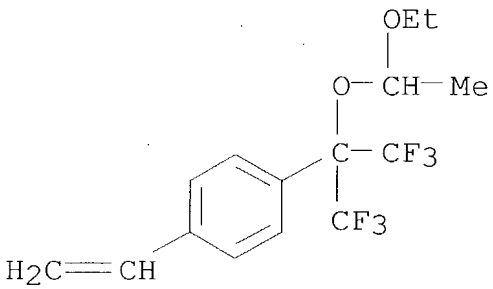
CRN 585-07-9
CMF C8 H14 O2



RN 487048-88-4 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol, 1-ethenyl-4-(1-ethoxyethoxy)benzene and 1-ethenyl-4-[1-(1-ethoxyethoxy)-2,2,2-trifluoro-1-(trifluoromethyl)ethyl]benzene (9CI) (CA INDEX NAME)

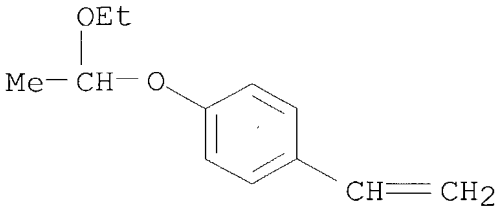
CM 1

CRN 430437-00-6
CMF C15 H16 F6 O2



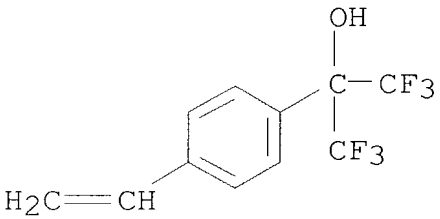
CM 2

CRN 157057-20-0
CMF C12 H16 O2



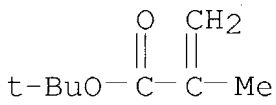
CM 3

CRN 2386-82-5
CMF C11 H8 F6 O



CM 4

CRN 585-07-9
CMF C8 H14 O2



IC ICM G03F007-039
ICS C08F012-14; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST pos **photoresist** fluorine excimer laser transparency; chem amplification **photoresist** resoln excimer laser; styrene fluoropolymer **photoresist** fluorine excimer laser
IT Positive **photoresists**
(F-contg. styrene polymers for chem. amplified pos. **photoresists** with high resoln. and transparency to F2

excimer laser beams)

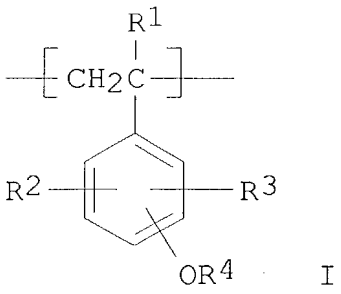
IT Fluoropolymers, processes
(F-contg. styrene polymers for chem. amplified pos. **photoresists** with high resoln. and transparency to F2 excimer laser beams)

IT 109-92-2DP, Ethyl vinyl ether, ethers with F-contg. acrylic styrene polymers **370866-15-2P** 397302-29-3P 430437-01-7DP, ethers with Et vinyl ether 430437-07-3P 462109-81-5P 462109-83-7P 462109-85-9P 462109-89-3P 462109-91-7P 462109-95-1P 487048-75-9P 487048-76-0P 487048-77-1P 487048-78-2P 487048-79-3P 487048-81-7P 487048-82-8P 487048-83-9P 487048-85-1P 487048-86-2P 487048-87-3P **487048-88-4P** 487048-89-5P 487048-90-8P 487048-92-0P 487048-93-1P 487048-94-2P 487048-95-3P
(F-contg. styrene polymers for chem. amplified pos. **photoresists** with high resoln. and transparency to F2 excimer laser beams)

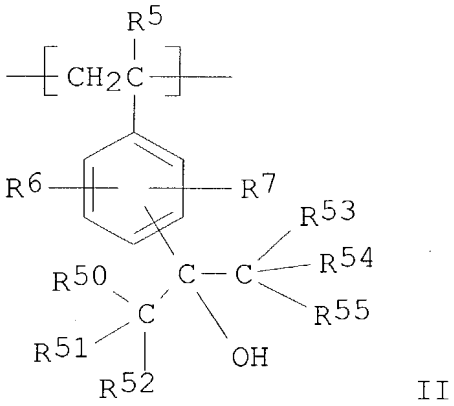
L23 ANSWER 12 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN

2003:35187 Document No. 138:98199 Positive-working vacuum UV-sensitive **photoresist** material composition containing specific resin. Kanna, Shinichi; Mizutani, Kazuyoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003015298 A2 20030115, 39 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-202241 20010703.

GI



I



II

AB The title compn. contains a resin increasing soly. toward an alkali soln. by an acid, a photoacid generator, and a solvent, wherein the resin contains repeating unit I, II, and [-CH(R17a)-C(R17)(COOR18)-](R1,5,17a,17 = H, halo, cyano, alkyl; R2,3,6,7 = H, halo, cyano, hydroxyl, etc.; R50-55 = H, F, alkyl; R4 = -C(R11)(R12)(R13), -C(R14)(R15)(-O-R16); R18 = -C(R18d)(R18e)(R18f),

-C(R18d)(R18e)-O-(R18g); R11-13 = alkyl, cycloalkyl, alkenyl, aralkyl, aryl; R14-15 = H, alkyl; R16 = alkyl, cycloalkyl, aralkyl, aryl). The compn. provides the good transparency towards vacuum UV and provides the good soly. contrast towards developers.

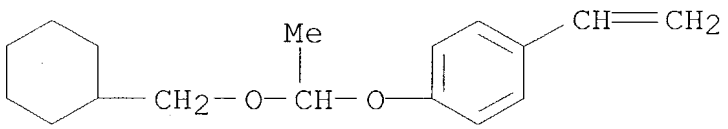
IT **485390-44-1P 485390-49-6P 485390-56-5P 485390-57-6P 485390-64-5P 485390-66-7P 485390-68-9P 485390-69-0P**
(resin; pos.-working vacuum UV-sensitive **photoresist** material compn. contg. specific resin)

RN 485390-44-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-[1-(cyclohexylmethoxy)ethoxy]-4-ethenylbenzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

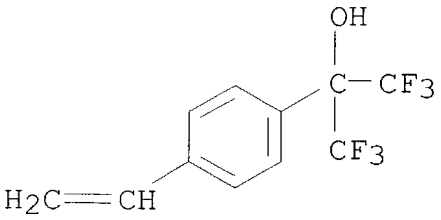
CM 1

CRN 430437-16-4
CMF C17 H24 O2



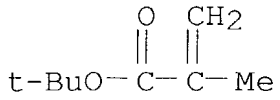
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

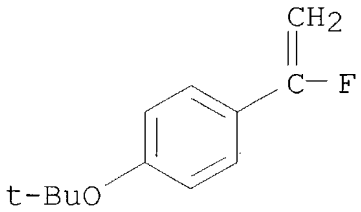
CRN 585-07-9
CMF C8 H14 O2



RN 485390-49-6 HCAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylethoxy)-4-(1-fluoroethenyl)benzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

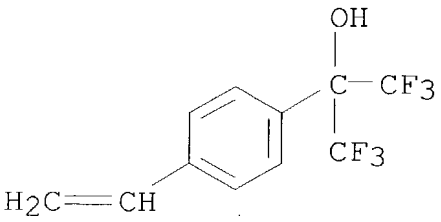
CM 1

CRN 485390-48-5
CMF C12 H15 F O



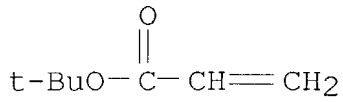
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

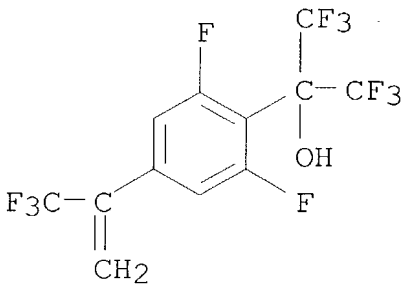
CRN 1663-39-4
CMF C7 H12 O2



RN 485390-56-5 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 2,6-difluoro-α,α-bis(trifluoromethyl)-4-[1-(trifluoromethyl)ethenyl]benzenemethanol and 1-[1-(4-ethenylphenoxy)-1-methylethyl]tricyclo[3.3.1.13,7]decane (9CI) (CA INDEX NAME)

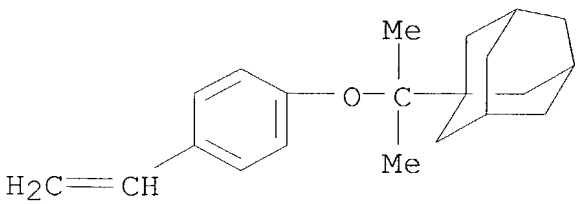
CM 1

CRN 430437-28-8
CMF C12 H5 F11 O



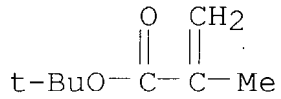
CM 2

CRN 430437-25-5
CMF C21 H28 O



CM 3

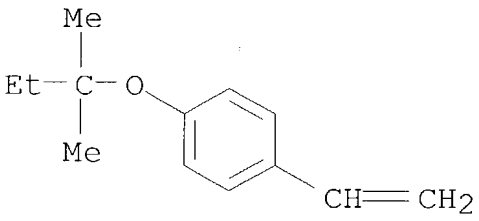
CRN 585-07-9
CMF C8 H14 O2



RN 485390-57-6 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylpropoxy)-4-ethenylbenzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

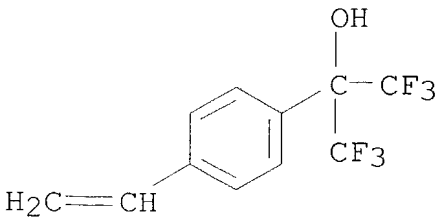
CM 1

CRN 146716-59-8
CMF C13 H18 O



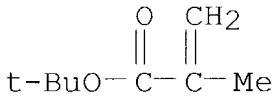
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

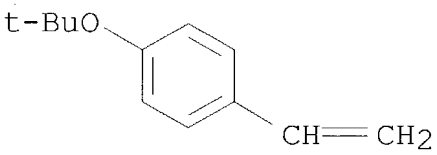
CRN 585-07-9
CMF C8 H14 O2



RN 485390-64-5 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene, 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 2-methyl-2-propenenitrile (9CI) (CA INDEX NAME)

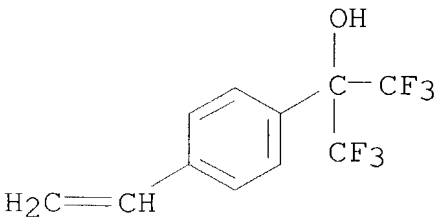
CM 1

CRN 95418-58-9
CMF C12 H16 O



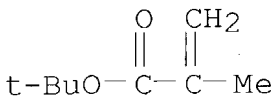
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



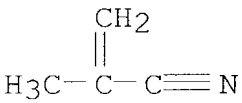
CM 3

CRN 585-07-9
CMF C8 H14 O2



CM 4

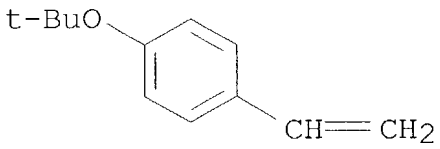
CRN 126-98-7
CMF C4 H5 N



RN 485390-66-7 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene, 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 4-(1-methylethenyl)phenol (9CI) (CA INDEX NAME)

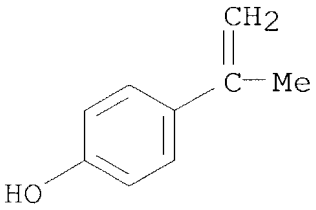
CM 1

CRN 95418-58-9
CMF C12 H16 O



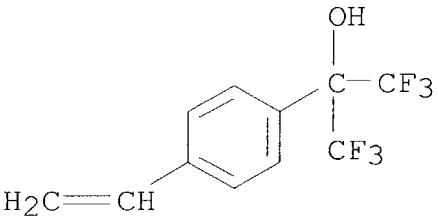
CM 2

CRN 4286-23-1
CMF C9 H10 O



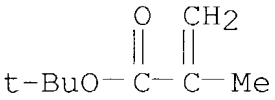
CM 3

CRN 2386-82-5
CMF C11 H8 F6 O



CM 4

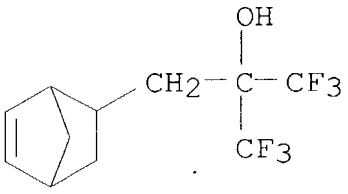
CRN 585-07-9
CMF C8 H14 O2



RN 485390-68-9 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with α,α-bis(trifluoromethyl)bicyclo[2.2.1]hept-5-ene-2-ethanol, 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

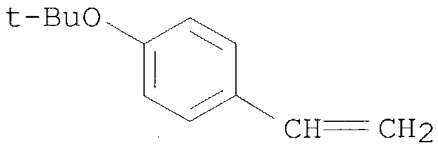
CM 1

CRN 196314-61-1
CMF C11 H12 F6 O



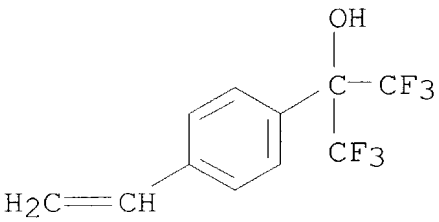
CM 2

CRN 95418-58-9
CMF C12 H16 O



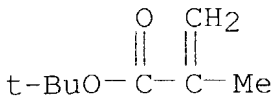
CM 3

CRN 2386-82-5
CMF C11 H8 F6 O



CM 4

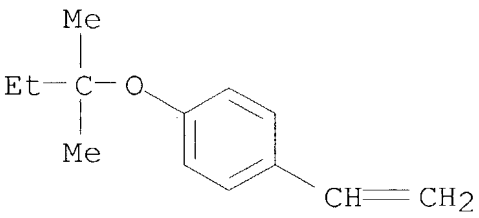
CRN 585-07-9
CMF C8 H14 O2



RN 485390-69-0 HCAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylpropoxy)-4-ethenylbenzene, 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 2-methyl-2-propenenitrile (9CI) (CA INDEX NAME)

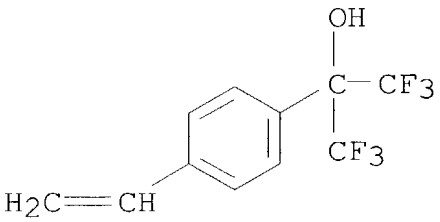
CM 1

CRN 146716-59-8
CMF C13 H18 O



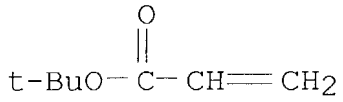
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



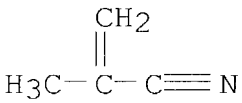
CM 3

CRN 1663-39-4
CMF C7 H12 O2



CM 4

CRN 126-98-7
CMF C4 H5 N



IC ICM G03F007-039
ICS C08F212-14; C08F220-18; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35
ST UV **photoresist** compn resin
IT Positive **photoresists**
(vacuum UV-sensitive; pos.-working vacuum UV-sensitive **photoresist** material compn. contg. specific resin)
IT 485390-41-8P 485390-42-9P 485390-43-0P **485390-44-1P**
485390-45-2P 485390-46-3P 485390-47-4P **485390-49-6P**
485390-51-0P 485390-52-1P 485390-54-3P 485390-55-4P
485390-56-5P **485390-57-6P** 485390-58-7P
485390-60-1P 485390-62-3P 485390-63-4P **485390-64-5P**
485390-65-6P **485390-66-7P** 485390-67-8P
485390-68-9P **485390-69-0P** 485390-70-3P
485390-72-5P 485390-73-6P 485390-76-9P
(resin; pos.-working vacuum UV-sensitive **photoresist** material compn. contg. specific resin)

L23 ANSWER 13 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2003:20985 Document No. 138:98193 Positive **resist** composition. Mizutani, Kazuyoshi; Kanna, Shinichi (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1273969 A2 20030108, 93 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK. (English). CODEN: EPXXDW. APPLICATION: EP 2002-14079 20020701. PRIORITY: JP 2001-202240 20010703; JP 2001-202242 20010703; JP 2001-202243 20010703.

AB A pos. **resist** compn. comprises (A) a resin which comprises a specified repeating units and (B) a compd. capable of generating an acid upon irradn. with one of an actinic ray and a radiation. The present invention relates to a pos. **resist** compn. capable of forming fine patterns with use of a vacuum UV ray having a wavelength ≤ 160 nm.

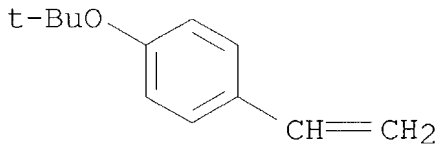
IT **483348-68-1P 483348-81-8P**
(pos. **resist** compn. for vacuum UV photolithog. contg.)

RN 483348-68-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene, 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and phenyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

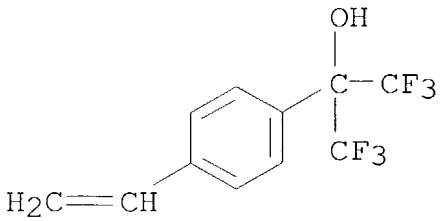
CM 1

CRN 95418-58-9
CMF C12 H16 O



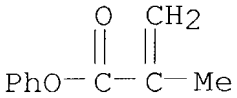
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



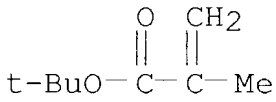
CM 3

CRN 2177-70-0
CMF C10 H10 O2



CM 4

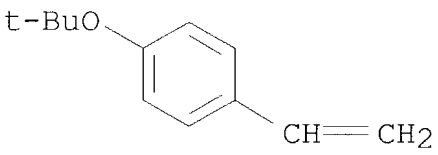
CRN 585-07-9
CMF C8 H14 O2



RN 483348-81-8 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-(1,1-dimethylethoxy)-4-ethenylbenzene, 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 3,3,4,4,5,5,6,6,6-nonafluorohexyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

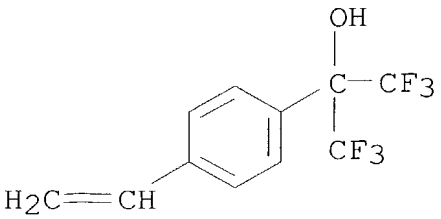
CM 1

CRN 95418-58-9
CMF C12 H16 O



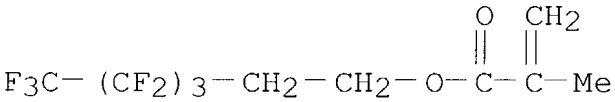
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



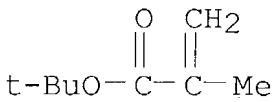
CM 3

CRN 1799-84-4
CMF C10 H9 F9 O2



CM 4

CRN 585-07-9
CMF C8 H14 O2



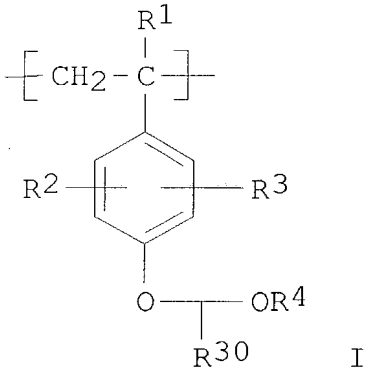
IC ICM G03F007-004
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST pos **photoresist** resin compn photolithog
IT Positive **photoresists**
(pos. **resist** compn. for vacuum UV photolithog.)
IT Polysiloxanes, uses
(surfactant; pos. **resist** compn. for vacuum UV photolithog. contg.)
IT Photolithography
(vacuum UV; pos. **resist** compn. for vacuum UV)
IT 430437-22-2P 430437-35-7P 479073-24-0P 483348-64-7P
483348-65-8P 483348-66-9P 483348-67-0P **483348-68-1P**

483348-69-2P 483348-70-5P 483348-71-6P 483348-72-7P
483348-73-8P 483348-74-9P 483348-75-0P 483348-76-1P
483348-78-3P 483348-80-7P **483348-81-8P** 483348-83-0P
483348-85-2P 483348-86-3P 483348-88-5P 483348-90-9P
483348-91-0P 483348-92-1P 483348-93-2P 483348-94-3P
483348-96-5P 483348-97-6P 483348-98-7P 483348-99-8P
483349-01-5P 483349-02-6P 483349-04-8P 483349-06-0P
483349-08-2P 483349-10-6P 483349-11-7P 483349-12-8P
483349-13-9P 483349-15-1P 483349-16-2P
(pos. **resist** compn. for vacuum UV photolithog. contg.)

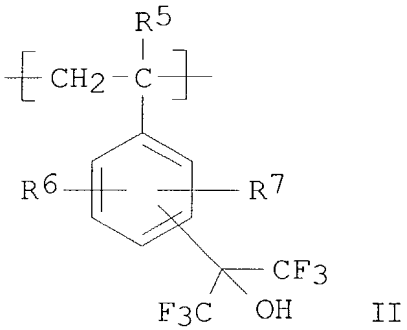
IT 9016-45-9, Polyoxyethylene nonyl phenyl ether 137462-24-9, Megafac F 176 216679-67-3, Megafac R 08
(surfactant; pos. **resist** compn. for vacuum UV photolithog. contg.)

L23 ANSWER 14 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2002:901555 Document No. 138:9654 Positive-working **resist** resin composition containing specific resin. Kanna, Shinichi; Mizutani, Kazuyoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002341543 A2 20021127, 37 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-151101 20010521.

GI



I



II

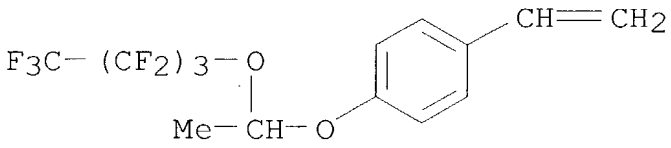
AB The title compn. contains a resin increasing the soly. toward an alkali developer by reacting with an acid, and an actinic ray- or radiation-sensitive acid-generator, wherein the resin contains repeating unit I or II (R2, R5 = H, F, alkyl; R2-3,6-7 = H, hydroxyl, halo, cyano, etc.; R4 = alkyl, acyl, alkoxycarbonyl). The compn. provides the **photoresist** precursors, which is suitable exposure with F2 excimer laser and shows the good soly. contrast.

IT **476630-25-8**
(resin; pos.-working **resist** resin compn.)

RN 476630-25-8 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol, 1-ethenyl-4-[1-(nonafluorobutoxy)ethoxy]benzene and 2-methyl-2-propenamide (9CI) (CA INDEX NAME)

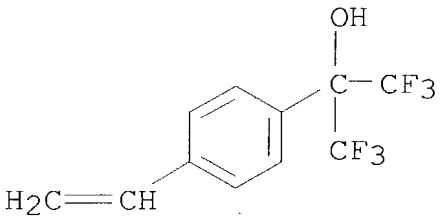
CM 1

CRN 476630-22-5
CMF C14 H11 F9 O2



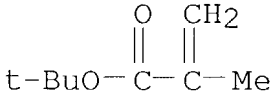
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



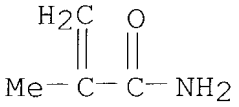
CM 3

CRN 585-07-9
CMF C8 H14 O2



CM 4

CRN 79-39-0
CMF C4 H7 N O



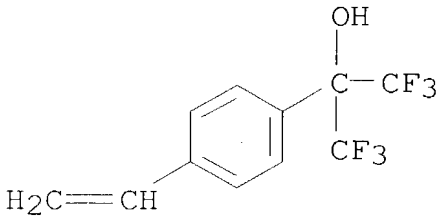
IC ICM G03F007-039
ICS C08F212-14; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35
ST **photoresists**
IT Positive **photoresists**
(pos.-working **resist** resin compn.)
IT 430437-13-1 430437-14-2 430437-17-5 476630-10-1 476630-11-2
476630-12-3 476630-13-4 476630-14-5 476630-15-6 476630-16-7
476630-17-8 476630-19-0 476630-21-4 476630-23-6 476630-24-7
476630-25-8 476630-26-9 476630-27-0 476630-28-1
476630-29-2 476630-30-5 476630-31-6 476630-32-7 476646-86-3
(resin; pos.-working **resist** resin compn.)

L23 ANSWER 15 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2002:850191 Document No. 137:360314 Fluorine-containing styrene acrylate copolymers and use thereof in lithographic **photoresist** compositions. Allen, Robert David; Brock, Phillip Joe; Ito, Hiroshi; Wallraff, Gregory Michael (International Business Machines Corporation, USA). U.S. Pat. Appl. Publ. US 2002164538 A1 20021107, 18 pp. (English). CODEN: USXXCO. APPLICATION: US 2001-794466 20010226.
AB Copolymers are prepd. by radical polymn. of a fluorine-contg. arom. monomer and an acrylate-based comonomer that may or may not be fluorinated. The polymers are useful in lithog. **photoresist** compns., particularly chem. amplification **resists**. The polymers are substantially transparent to deep UV (DUV) radiation, i.e., radiation of a wavelength < 250 nm, including 157 nm and 248 nm radiation, and are thus useful in DUV lithog. **photoresist** compns. A method for using the compn. to generate **resist** images on a substrate is also provided, i.e., in the manuf. of integrated circuits or the like.
IT **370866-15-2P**, p-(Hexafluoro-2-hydroxypropyl)styrene-tert-butyl methacrylate copolymer
(fluorine-contg. styrene acrylate copolymers for lithog. **photoresist** compns.)
RN 370866-15-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

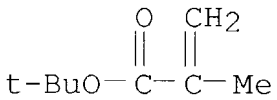
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



CM 2

CRN 585-07-9
CMF C8 H14 O2



IC ICM G03F007-038
ICS G03F007-20; G03F007-26
NCL 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38, 76
ST **photoresist** fluorine contg styrene acrylate copolymers lithog integrated circuit
IT Photolithography
(UV vacuum; fluorine-contg. styrene acrylate copolymers and use thereof in lithog. **photoresist** compns.)
IT **Photoresists**
(fluorine-contg. styrene acrylate copolymers and use thereof in lithog. **photoresist** compns.)
IT Semiconductor device fabrication
(fluorine-contg. styrene acrylate copolymers for lithog. **photoresist** compns.)

IT 370866-13-0P, tert-Butyl α-trifluoromethylacrylate-p-(Hexafluoro-2-hydroxypropyl)styrene copolymer **370866-15-2P**, p-(Hexafluoro-2-hydroxypropyl)styrene-tert-butyl methacrylate copolymer
(fluorine-contg. styrene acrylate copolymers for lithog. **photoresist** compns.)

IT 474635-14-8P 474635-15-9P 474635-16-0P 474635-17-1P
(fluorine-contg. styrene acrylate copolymers for lithog. **photoresist** compns.)

IT 240435-11-4
(photoacid generator; fluorine-contg. styrene acrylate copolymers for lithog. **photoresist** compns.)

IT 335-08-0P, 1,1,1-Trifluoroacetone cyanohydrin 381-84-0P, 2-(Trifluoromethyl)acrylonitrile 382-90-1P, Methyl α-(trifluoromethyl)acrylate
(prepn. of fluorine-contg. styrene acrylate copolymers for lithog. **photoresist** compns.)

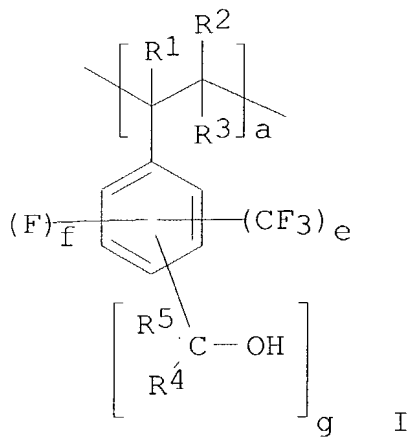
IT 75-65-0, t-Butanol, reactions 79-37-8, Oxalyl chloride 108-24-7, Acetic anhydride 143-33-9, Sodium cyanide 421-50-1, 1,1,1-Trifluoroacetone 684-16-2, Hexafluoroacetone 2039-82-9, 4-Bromostyrene
(prepn. of fluorine-contg. styrene acrylate copolymers for lithog. **photoresist** compns.)

IT 337-16-6P 381-98-6P, 2-(Trifluoromethyl)acrylic acid 382-43-4P, 3-Hydroxy-2-(Trifluoromethyl)propionic acid 2386-82-5P 4588-51-6P 105935-24-8P
(prepn. of fluorine-contg. styrene acrylate copolymers for lithog. **photoresist** compns.)

L23 ANSWER 16 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN

2002:847803 Document No. 137:360305 Polymers with fluorinated styrene-based mer units, their positive **resist** materials, and their patterning. Hatakeyama, Jun; Harada, Yuji; Watanabe, Atsushi; Sasako, Masaru; Endo, Masataka; Kishimura, Shinji; Otani, Mitsutaka; Miyazawa, Satoru; Tsutsumi, Kentaro; Maeda, Kazuhiko (Shin-Etsu Chemical Industry Co., Ltd., Japan; Matsushita Electric Industrial Co., Ltd.; Central Glass Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 2002322217 A2 20021108, 28 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-128529 20010426.

GI



I

AB The polymers for **resist** materials contain fluorinated styrene-based mer units I (R1 = H, F, C1-20 alkyl which may be fluorinated; R4, R5 = H, F, C1-4 alkyl which may be fluorinated; R4 and/or R5 contain ≥1 F; 0 ≤ e < 5, f = 0-5, g = 1-5, 0 < e + f < 5, a > 0) and mer units whose H of CO2H or OH are substituted with acid-labile groups. Chem. amplified **resist** materials contain the polymers, org. solvents, acid generators, and optionally basic compds. and dissoln. inhibitors. The **resist** materials are patterned by using high-energy ray of wavelength ≤300 nm or electron beams, esp. 100-180 nm DUV, 1-30 nm soft x-ray, or electron beams. The **resist** materials have good F2 transmittance, dry etching resistance, and suppressed decrease in dissoln. rate of unexposed sites by high dose.

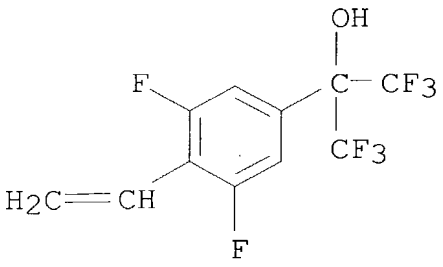
IT **474088-23-8P 474088-26-1P 474088-28-3P**
(polymers with fluorinated styrene-based mer units, their pos. DUV **resist** materials, and their patterning)

RN 474088-23-8 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenyl-3,5-difluoro-α,α-bis(trifluoromethyl)benzeneme thanol (9CI) (CA INDEX NAME)

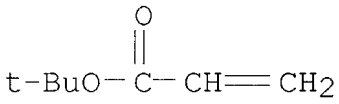
CM 1

CRN 474088-22-7
CMF C11 H6 F8 O



CM 2

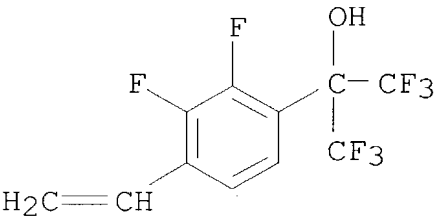
CRN 1663-39-4
CMF C7 H12 O2



RN 474088-26-1 HCAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenyl-2,3-difluoro-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

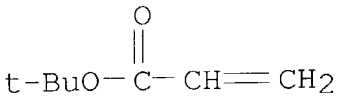
CM 1

CRN 474088-25-0
CMF C11 H6 F8 O



CM 2

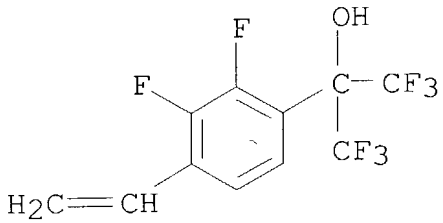
CRN 1663-39-4
CMF C7 H12 O2



RN 474088-28-3 HCAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenyl-2,3-difluoro-α,α-bis(trifluoromethyl)benzeneme thanol and ethenylpentafluorobenzene (9CI) (CA INDEX NAME)

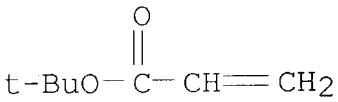
CM 1

CRN 474088-25-0
CMF C11 H6 F8 O



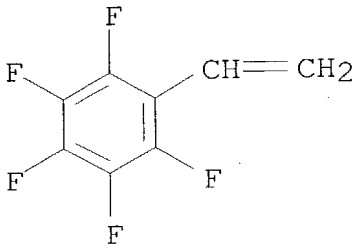
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 653-34-9
CMF C8 H3 F5



IC ICM C08F212-14
ICS C08F216-12; C08F220-10; C08F222-10; C08F222-40; C08F230-08; G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST fluorinated styrene polymer chem amplified **resist**; pos DUV **resist** fluorinated styrene polymer; electron beam **resist** pos fluorinated styrene polymer; hexafluoroisopropanol substituted styrene polymer DUV **resist**

IT Amines, uses
(base; polymers with fluorinated styrene-based mer units, their pos. DUV **resist** materials, and their patterning)

IT Positive **photoresists**
(polymers with fluorinated styrene-based mer units, their pos. DUV **resist** materials, and their patterning)

IT Electron beam **resists**
(pos.-working; polymers with fluorinated styrene-based mer units, their pos. DUV **resist** materials, and their patterning)

IT 102-71-6, Triethanolamine, uses 70384-51-9 139254-88-9
(base; polymers with fluorinated styrene-based mer units, their pos. DUV **resist** materials, and their patterning)

IT 102-82-9, Tributylamine
(dissoln. inhibitor; polymers with fluorinated styrene-based mer units, their pos. DUV **resist** materials, and their patterning)

IT 258342-00-6
(photoacid generator; polymers with fluorinated styrene-based mer units, their pos. DUV **resist** materials, and their patterning)

IT **474088-23-8P** 474088-24-9P **474088-26-1P**
474088-28-3P
(polymers with fluorinated styrene-based mer units, their pos. DUV **resist** materials, and their patterning)

L23 ANSWER 17 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2002:799429 Document No. 139:76210 Insertion effects of various acid sensitive groups into acetal-type polymer on the profile of 248-nm

chemically amplified **resist**. Chung, Yoon-Sik; Kim, Hyun-Jin; Cho, Sook Hee; Lee, Dong Hwal; Im, Kwang Hwyi; Yim, Yun-Gill; Kim, Deog-Bae; Kim, Jae-Hyun (Electron. Mater. Div., DongJin Semichem Co., Ltd., Hwasung-Kun Kyungki-do, 445-930, S. Korea). Proceedings of SPIE-The International Society for Optical Engineering, 4690(Pt. 2, Advances in Resist Technology and Processing XIX), 660-670 (English) 2002. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB Various derivs. of modified poly(4-hydroxystyrene-4-(1-ethylethoxystyrene))(M-EEPHS) were synthesized by insertion of third monomer unit such as styrene, 4-acetoxystyrene, 4-methoxycarbonyloxystyrene, tert-butoxycarbonyloxystyrene, tert-Bu acrylate, and 4-(1-cyclohexylethoxy)styrene. Their dissoln. rate behavior was investigated with different blocking level. From the av. dissoln. rate of M-EEPHS in a 2.38 wt% TMAH soln. as a function of the total protection %, hydrophobicity was proven as more influential factor for the dissoln. inhibition rather than hydrogen bonding by ester or carbonate functionality in a blocking group. To study structural effect on KrF lithog. performance, **resists** contg. M-EEPHS were formulated and testified. Defects that are found in EEPHS based **resist**, such as LER (line edge roughness) and top surface erosion at defocus can be solved by incorporation of carbornate, bulky acetal functionality or dissoln. inhibition group. When hybrid system, which contained both M-EEPHS and poly[4-hydroxystyrene-tert-Bu acrylate-4-(3-cyano-1,5-di-tert-Bu carbonyl pentyl styrene)](P(HS-TBA-CBPS)) as an annealing type resin, were compared with the lithog. results of single polymeric system (M-EEPHS only), their performances were directly projected to those of blends of high activation type and low activation type resin.

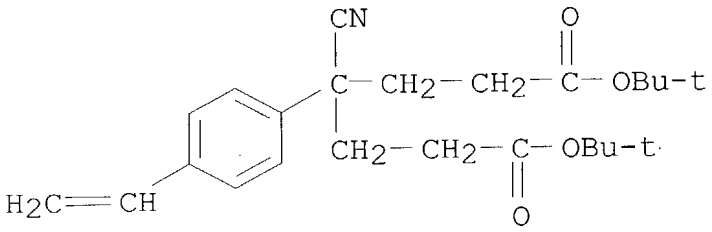
IT **328238-42-2**
(blending resin; dissoln. rate and lithog. characteristics of deep-UV chem. amplified **photoresists** based on blend of polymers including structurally modified poly(p-hydroxystyrene))

RN 328238-42-2 HCAPLUS

CN Heptanedioic acid, 4-cyano-4-(4-ethenylphenyl)-, bis(1,1-dimethylethyl) ester, polymer with 1,1-dimethylethyl 2-propenoate and 4-ethenylphenol (9CI) (CA INDEX NAME)

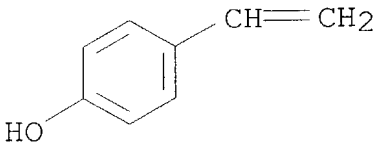
CM 1

CRN 328238-41-1
CMF C24 H33 N O4



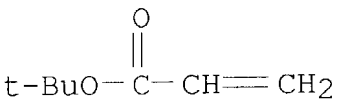
CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

CRN 1663-39-4
CMF C7 H12 O2



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST acetal type polymer deep UV lithog chem amplified **photoresist**; polyhydroxystyrene structural modification deep UV lithog chem amplified **photoresist**

IT **Photoresists**
(deep-UV, chem. amplified; dissoln. rate and lithog. characteristics of deep-UV chem. amplified **photoresists** based on structurally modified poly(p-hydroxystyrene))

IT Dissolution
(kinetics; dissoln. rate and lithog. characteristics of deep-UV chem. amplified **photoresists** based on structurally modified poly(p-hydroxystyrene))

IT Molecular structure-property relationship
Protective groups
(lithog. characteristics of deep-UV chem. amplified **photoresists** based on structurally modified poly(p-hydroxystyrene))

IT Protective groups
(tert-butoxycarbonyl; lithog. characteristics of deep-UV chem. amplified **photoresists** based on structurally modified poly(p-hydroxystyrene))

IT **328238-42-2**
(blending resin; dissoln. rate and lithog. characteristics of deep-UV chem. amplified **photoresists** based on blend of polymers including structurally modified poly(p-hydroxystyrene))

IT 75-59-2, Tetramethyl ammonium hydroxide
(developer; dissoln. rate and lithog. characteristics of deep-UV chem. amplified **photoresists** based on structurally modified poly(p-hydroxystyrene))

IT 108-24-7D, Acetic anhydride, reaction products with poly(4-hydroxystyrene) reacted with Et vinyl ether 109-92-2D, Ethyl vinyl ether, reaction products with poly(hydroxystyrene) and blocking groups providing compds. 2182-55-0D, Cyclohexyl vinyl ether, reaction products with poly(4-hydroxystyrene) reacted with Et vinyl ether 4525-33-1D, Dimethyl pyrocarbonate, reaction products with poly(4-hydroxystyrene) reacted with Et vinyl ether 24424-99-5D, Di-tert-butyl dicarbonate, reaction products with poly(4-hydroxystyrene) reacted with Et vinyl ether 24979-70-2D, Poly(4-hydroxystyrene), reaction products with Et vinyl ether and blocking groups providing compds. 24979-74-6D, Poly(4-hydroxystyrene-styrene), reaction products with Et vinyl ether and blocking groups providing compds. 159296-87-4D, Poly(4-hydroxystyrene-tert-butyl acrylate), reaction products with Et vinyl ether and blocking groups providing compds.
(dissoln. rate and lithog. characteristics of deep-UV chem. amplified **photoresists** contg. structurally modified poly(p-hydroxystyrene))

IT 84540-57-8, Propylene glycol monomethyl ether acetate
(solvent; dissoln. rate and lithog. characteristics of deep-UV chem. amplified **photoresists** based on structurally modified poly(p-hydroxystyrene))

L23 ANSWER 18 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2002:799428 Document No. 139:76209 Synergic effect of acetal-based resin by blending with poly[4-hydroxystyrene-co-tert-butyl acrylate-co-4-(3-cyano-1,5-di-tert-butyl carbonylpentylstyrene (P(HS-TBA-CBPS)) on the profiles of 248 nm chemically amplified **resist**. Kim, Hyun-Jin; Chung, Yoon-Sik; Lee, Dong Hwal; Cho, Sook Hee; Im, Kwang Hwyi; Yim, Yun-Gill; Kim, Deog-Bae; Kim, Jae-Hyun (Electron. Mater. Div., DongJin Semichem Co., Ltd.,

Kwasung-Kun Kyungki-do, 445-930, S. Korea). Proceedings of SPIE-The International Society for Optical Engineering, 4690(Pt. 2, Advances in Resist Technology and Processing XIX), 651-659 (English) 2002. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB The authors prepd. terpolymer of p-hydroxystyrene, tert-Bu acrylate and 4-(3-cyano-1,5-di-tert-butylcarbonylpentylstyrene) (P(HS-TBA-CBPS)) and discussed a characteristic of prepd. polymer. As TBA, newly introduced monomer increases, contrast of **resist** is improved. And the prepd. polymer was blended with poly(4-hydroxystyrene-co-4-(1-ethylethoxystyrene)) (EE-PHS). The synergic effect on a **resist** performance in KrF lithog. by the combination of high and low activation energy system was shown. A **resist** using blending polymer was shown a good performance on resoln. and LER (line edge roughness) than **resist** using polymer sep. Based on the results, it was found that high performance KrF **resist** could be obtained by optimization of polymer blending.

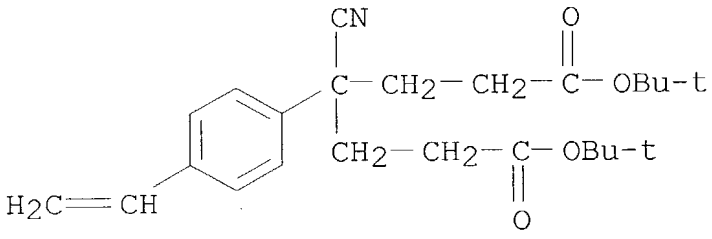
IT **328238-42-2P**
(lithog. properties of deep-UV chem. amplification **photoresist** contg. polymer blend of hydroxystyrene terpolymer and hydroxystyrene copolymer)

RN 328238-42-2 HCAPLUS

CN Heptanedioic acid, 4-cyano-4-(4-ethenylphenyl)-, bis(1,1-dimethylethyl) ester, polymer with 1,1-dimethylethyl 2-propenoate and 4-ethenylphenol (9CI) (CA INDEX NAME)

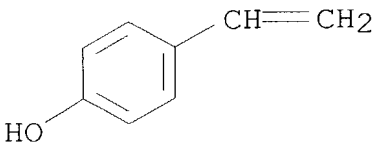
CM 1

CRN 328238-41-1
CMF C24 H33 N O4



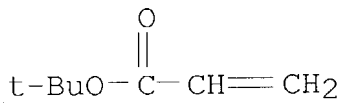
CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

CRN 1663-39-4
CMF C7 H12 O2



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST deep UV lithog chem amplification **photoresist** polymer blend; hydroxystyrene tertbutyl acrylate cyanotertbutylcarbonylpentylstyrene terpolymer blend ethylethoxystyrene copolymer

IT **Photoresists**
(deep-UV, chem. amplification; lithog. properties of chem. amplification **photoresist** for KrF lithog. contg. polymer blend of hydroxystyrene terpolymer and hydroxystyrene copolymer)

IT Polymer blends
(lithog. properties of deep-UV chem. amplification **photoresist** contg. polymer blend of hydroxystyrene terpolymer and hydroxystyrene copolymer)

IT Polydispersity
Polymerization
(polymn. reaction in synthesis of terpolymer for use in deep-UV chem. amplification **photoresist** based on polymer blend)

IT 84540-57-8, Propylene glycol monomethyl ether acetate
(casting solvent; lithog. properties of deep-UV chem. amplification **photoresist** contg. polymer blend of hydroxystyrene terpolymer and hydroxystyrene copolymer)

IT 75-59-2, Tetramethylammonium hydroxide
(developer; lithog. properties of deep-UV chem. amplification **photoresist** contg. polymer blend of hydroxystyrene terpolymer and hydroxystyrene copolymer)

IT 24979-70-2DP, 4-Hydroxystyrene homopolymer, reaction product with Et vinyl ether **328238-42-2P**

(lithog. properties of deep-UV chem. amplification **photoresist** contg. polymer blend of hydroxystyrene terpolymer and hydroxystyrene copolymer)

IT 1663-39-4, Tert-Butyl acrylate 2628-16-2, 4-Acetoxystyrene 328238-41-1
(polymn. reaction in synthesis of terpolymer for use in deep-UV chem. amplification **photoresist** based on polymer blend)

L23 ANSWER 19 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2002:799413 Document No. 139:60268 Investigation of a fluorinated ESCAP-based **resist** for 157-nm lithography. Cho, Sungseo; Klauck-Jacobs, Axel; Yamada, Shintaro; Xu, Cheng-Bai; Leonard, JoAnne; Zampini, Anthony (Air Products and Chemicals, Marlborough, MA, 01752, USA). Proceedings of SPIE-The International Society for Optical Engineering, 4690(Pt. 1, Advances in Resist Technology and Processing XIX), 522-532 (English) 2002. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB A survey of fluorine-contg. arom. polymers, with and without base sol. functionality, was conducted to det. their potential utility in 157 nm lithog. The focus was toward the design and evaluation of fluorine- contg. polymers that closely paralleled the ESCAP matrix resins now successfully used in 248 nm **photoresists**. New 4- hydroxytetrafluorostyrene (HTFS) based homo-, co- and ter-polymers were prepd. and evaluated for their potential utility at 157 nm **resists**. Significant advances were made toward reducing absorbance with fluorine substitution and monomer variation. The polymers form good films, have acceptable thermal stability and show good dry etch resistance with promising potential in thin film **resist** applications. The synthesis and pertinent characteristics of the new polymer systems as well as preliminary oxide etch results on representative polymers are discussed.

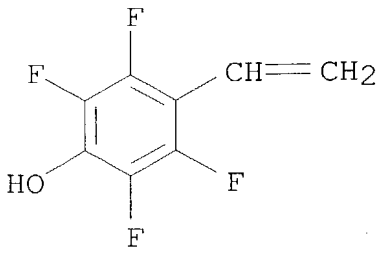
IT **546124-86-1P**
(investigation of fluorinated ESCAP-based **resist** for 157-nm lithog.)

RN 546124-86-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 4-ethenyl-2,3,5,6-tetrafluorophenol (9CI) (CA INDEX NAME)

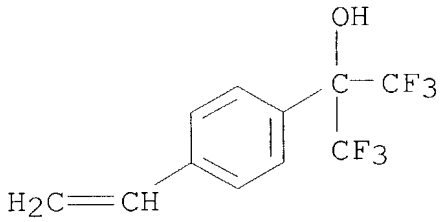
CM 1

CRN 385422-30-0
CMF C8 H4 F4 O



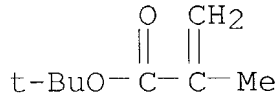
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

CRN 585-07-9
CMF C8 H14 O2



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
ST fluorinated ESCAP **resist** 157 nm lithog
IT Photolithography
Photoresists
(investigation of fluorinated ESCAP-based **resist** for 157-nm lithog.)
IT 9016-83-5P, Cresol-formaldehyde copolymer 24936-47-8P

24979-70-2P, Poly(4-hydroxystyrene) 26838-55-1P 29993-87-1P 30940-23-9P 31287-32-8P 37604-40-3P, 3,5-Bis(trifluoromethyl)phenol-formaldehyde copolymer 77884-23-2P 77884-24-3P 77884-32-3P 116352-29-5P 403814-65-3P 403814-66-4P 403814-68-6P 403814-72-2P 403814-74-4P 546124-77-0P 546124-79-2P 546124-81-6P 546124-82-7P 546124-83-8P 546124-84-9P **546124-86-1P** 546124-88-3P
(investigation of fluorinated ESCAP-based **resist** for 157-nm lithog.)

IT 653-34-9, Pentafluorostyrene
(prepn. of fluorinated ESCAP-based **resist** for 157-nm lithog.)

IT 385422-30-0P, 4-Hydroxy-2,3,5,6-tetrafluorostyrene
(prepn. of fluorinated ESCAP-based **resist** for 157-nm lithog.)

L23 ANSWER 20 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN

2002:799361 Document No. 138:392955 High-resolution fluorocarbon-based **resist** for 157-nm lithography. Fedynyshyn, Theodore H.; Mowers, William A.; Kunz, Roderick R.; Sinta, Roger F.; Sworin, Michael; Goodman, Russell B. (Lincoln Lab., MIT, Lexington, MA, 02420, USA). Proceedings of SPIE-The International Society for Optical Engineering, 4690(Pt. 1, Advances in Resist Technology and Processing XIX), 29-40 (English) 2002. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB Lithog. with 157 nm fluorine lasers is rapidly emerging as the next evolutionary step in optical lithog. and is clearly seen as the likely successor to 193 nm lithog. In fact, it may become the technol. of choice for the sub-100-nm node features. The **photoresists** used for this technol. will be required to be extendable to less than 70 nm. As has been demonstrated with the transition to shorter wavelengths in the past, the **photoresist** materials that were developed for the longer wavelength applications are too absorbent for practical use as high-resoln. single layer **resist** with 157 nm radiation. This high absorbency will force the coated **resist** thicknesses to be well under 100 nm. Fluorine contg. polymers have been demonstrated to be more transparent in this spectral region than pure hydrocarbon polymers. The authors developed and evaluated a no. of unique 4-hexafluoroisopropanolstyrene based polymer systems which we previously termed FESCAP **resists** and have developed new acetal partially blocked 4-hexafluoroisopropanolstyrene based copolymers. These **resists** can have absorbencies of under 3 μm-1 at 157 nm which could allow imaging to thicknesses of 150 nm. The authors recent **resist** designs are shown to have imaging capability down to 70 nm with a 0.60 NA microstepper.

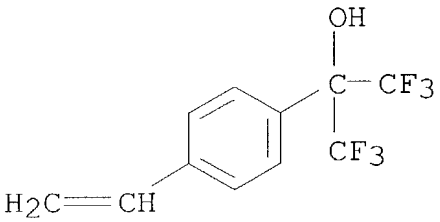
IT **397302-34-0**
(properties and lithog. characterization of hexafluoroisopropanolstyrene-based copolymers as **photoresists** for 157 nm fluorine laser lithog.)

RN 397302-34-0 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

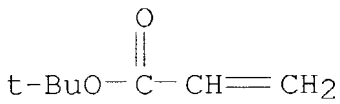
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



CM 2

CRN 1663-39-4
CMF C7 H12 O2



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST fluorocarbon based **photoresist** vacuum UV fluorine laser lithog; fluoroisopropanolstyrene copolymer **photoresist** vacuum UV fluorine laser lithog

IT **Photoresists**
(lithog. characterization of hexafluoroisopropanolstyrene-based copolymers as **photoresists** for 157 nm fluorine laser lithog.)

IT Etching
(plasma; lithog. characterization of hexafluoroisopropanolstyrene-based copolymers as **photoresists** for 157 nm fluorine

laser lithog.)

IT 75-59-2, Tetramethylammonium hydroxide
(developer; properties and lithog. characterization of hexafluoroisopropanolstyrene-based copolymers as **photoresists** for 157 nm fluorine laser lithog.)

IT 7440-59-7, Helium, uses 7782-44-7, Oxygen, uses 7782-50-5, Chlorine, uses 10035-10-6, Hydrogen bromide, uses
(polysilicon etching plasma; lithog. characterization of hexafluoroisopropanolstyrene-based copolymers as **photoresists** for 157 nm fluorine laser lithog.)

IT **397302-34-0** 459424-12-5 459424-15-8 479073-24-0
(properties and lithog. characterization of hexafluoroisopropanolstyrene-based copolymers as **photoresists** for 157 nm fluorine laser lithog.)

IT 7440-21-3, Silicon, uses
(substrate; lithog. characterization of hexafluoroisopropanolstyrene-based copolymers as **photoresists** for 157 nm fluorine laser lithog.)

IT 75-46-7, Trifluoromethane 75-73-0, Tetrafluoromethane 7440-37-1, Argon, uses
(thermal oxide etch plasma; properties and lithog. characterization of hexafluoroisopropanolstyrene-based copolymers as **photoresists** for 157 nm fluorine laser lithog.)

L23 ANSWER 21 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN

2002:676321 Document No. 137:224116 Low absorbing **resists** for 157 nm photolithography. Fedynyshyn, Theodore H.; Kunz, Roderick R.; Sworin, Michael; Sinta, Roger (Massachusetts Institute of Technology, USA). PCT Int. Appl. WO 2002069043 A2 20020906, 43 pp. DESIGNATED STATES: W: CA, JP; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2002-US5472 20020222. PRIORITY: US 2001-791252 20010223.

AB The present invention provides **photoresist** materials for use in photolithog. at wavelengths less than about 248 nm. More particularly, the **photoresists** of the invention are particularly suited for use in 157 nm lithog. A **photoresist** compn. of the invention includes a polymer having at least one monomeric unit having an arom. moiety. The monomeric unit further includes at least a group, such as an electron withdrawing group, attached to the arom. moiety. The attached group includes at least one CF bond. The polymer further includes an acidic hydroxyl group. A **photoresist** compn. of the invention can have an absorbance in a range of 1-5 μm-1 at 157 nm, rendering it particularly suitable for use as a single layer **resist** in 157 nm lithog.

IT **397302-34-0P 397302-57-7P 397302-62-4P**
397302-67-9P 397302-71-5P 457048-20-3P

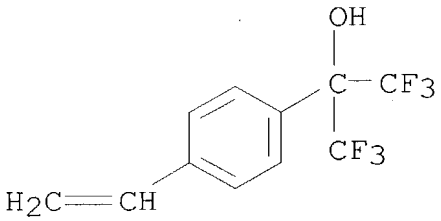
(low absorbing **resists** for 157 nm photolithog.)

RN 397302-34-0 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

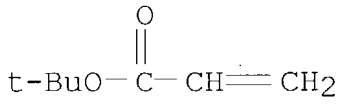
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



CM 2

CRN 1663-39-4
CMF C7 H12 O2

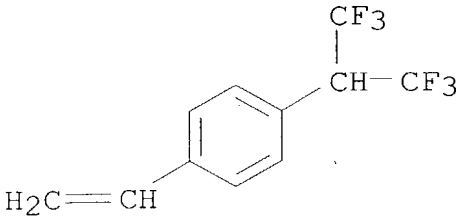


RN 397302-57-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 1-ethenyl-4-[2,2,2-trifluoro-1-(trifluoromethyl)ethyl]benzene (9CI) (CA INDEX NAME)

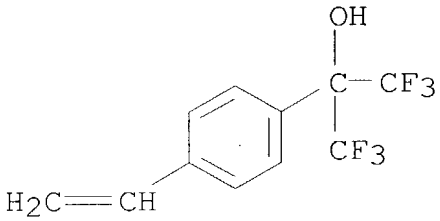
CM 1

CRN 397302-06-6
CMF C11 H8 F6



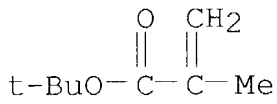
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

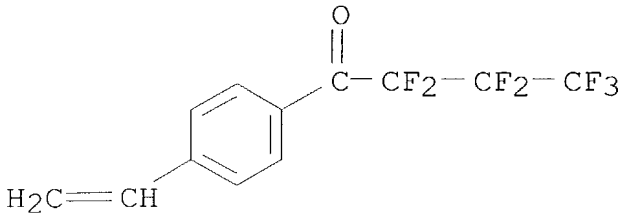
CRN 585-07-9
CMF C8 H14 O2



RN 397302-62-4 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 1-(4-ethenylphenyl)-2,2,3,3,4,4,4-heptafluoro-1-butanone (9CI) (CA INDEX NAME)

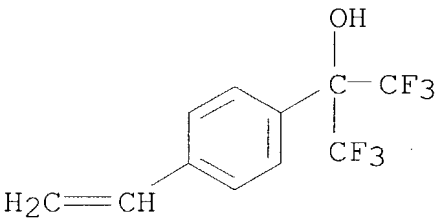
CM 1

CRN 74946-46-6
CMF C12 H7 F7 O



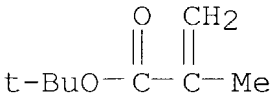
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

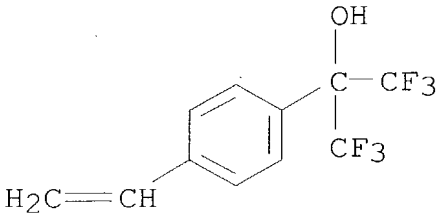
CRN 585-07-9
CMF C8 H14 O2



RN 397302-67-9 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 2-propenenitrile (9CI) (CA INDEX NAME)

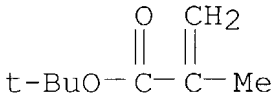
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



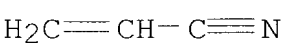
CM 2

CRN 585-07-9
CMF C8 H14 O2



CM 3

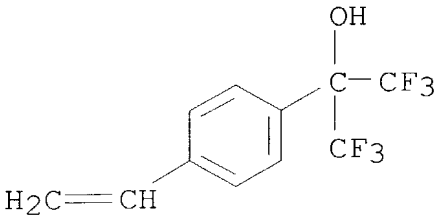
CRN 107-13-1
CMF C3 H3 N



RN 397302-71-5 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 2-methyl-2-propenenitrile (9CI) (CA INDEX NAME)

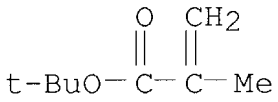
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



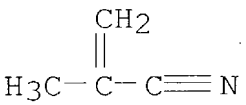
CM 2

CRN 585-07-9
CMF C8 H14 O2



CM 3

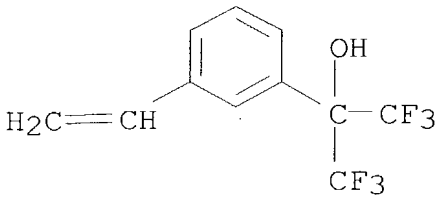
CRN 126-98-7
CMF C4 H5 N



RN 457048-20-3 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 3-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

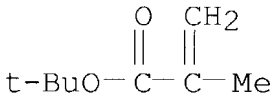
CM 1

CRN 122056-08-0
CMF C11 H8 F6 O



CM 2

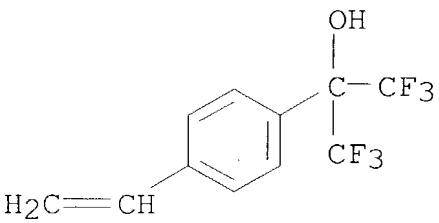
CRN 585-07-9
CMF C8 H14 O2



IT **370866-15-2P 397302-39-5P 397302-51-1P**
(low absorbing **resists** for 157 nm photolithog.)
RN 370866-15-2 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

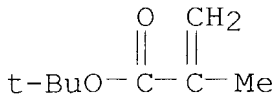
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



CM 2

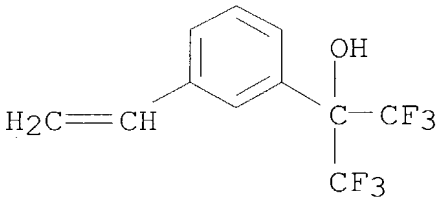
CRN 585-07-9
CMF C8 H14 O2



RN 397302-39-5 HCAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 3-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

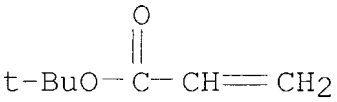
CM 1

CRN 122056-08-0
CMF C11 H8 F6 O



CM 2

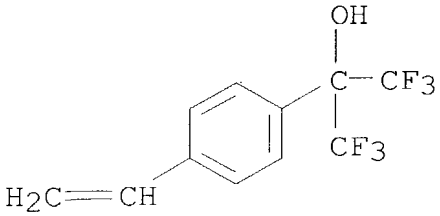
CRN 1663-39-4
CMF C7 H12 O2



RN 397302-51-1 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-ethenyl-3,5-bis(trifluoromethyl)benzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

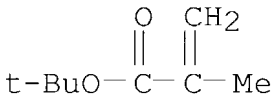
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



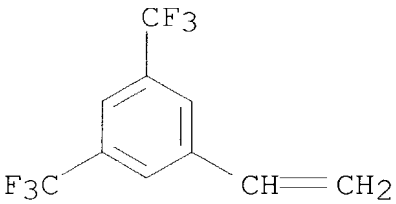
CM 2

CRN 585-07-9
CMF C8 H14 O2



CM 3

CRN 349-59-7
CMF C10 H6 F6



IC ICM G03F007-039
ICS G03F007-004
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST **photoresist** UV compn fluoropolymer photolithog chem amplified single layer
IT Photolithography
Photoresists
(UV; low absorbing **resists** for 157 nm photolithog.)

IT Fluoropolymers, properties
(low absorbing **resists** for 157 nm photolithog.)
IT 2052-49-5, Tetrabutyl ammonium hydroxide
(base additive; low absorbing **resists** for 157 nm photolithog.)
IT 2386-82-5P
(in prepn. of **photoresists** materials)
IT 59829-15-1P 74946-46-6P 120721-71-3P 122056-08-0P 125431-52-9P 143336-93-0P 397302-06-6P 397302-17-9P 457048-16-7P
(in prepn. of **photoresists** materials)
IT 107-30-2, Chloromethyl methyl ether 431-47-0, Methyl trifluoroacetate 684-16-2, Hexafluoroacetone 1020-31-1, 3,5-Di-tert-butylcatechol 1712-70-5, p-Chloro-α-methylstyrene 2039-82-9, p-Bromostyrene
(in prepn. of **photoresists** materials)
IT 18120-63-3P 95499-54-0P
(in prepn. of **photoresists** materials)
IT 9003-53-6P, Poly(styrene) 24936-47-8P, Poly(4-fluorostyrene) 25232-27-3P, Poly(tert-butyl acrylate) 26009-55-2P, Poly(4-tert-butyl styrene) 26838-55-1P, Poly(pentafluorostyrene) 31287-32-8P 59269-51-1P, Poly(vinyl phenol) 77884-24-3P, Poly(4-trifluoromethyl styrene) 77884-32-3P 116352-29-5P 122056-09-1P 125431-53-0P 143336-94-1P 370866-13-0P 397302-12-4P 397302-18-0P 397302-23-7P 397302-29-3P **397302-34-0P 397302-57-7P 397302-62-4P 397302-67-9P 397302-71-5P** 457048-18-9P **457048-20-3P**
(low absorbing **resists** for 157 nm photolithog.)
IT **370866-15-2P 397302-39-5P** 397302-44-2P **397302-51-1P**
(low absorbing **resists** for 157 nm photolithog.)
IT 194861-06-8 218151-20-3
(photoacid generator; low absorbing **resists** for 157 nm photolithog.)

L23 ANSWER 22 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2002:633344 Document No. 138:63742 Fluoroaromatic **resists** for 157-nm lithography. Fedynyshyn, Theodore H.; Kunz, Roderick R.; Sinta, Roger F.; Sworin, Michael; Mowers, William A.; Goodman, Russell B.; Cabral, Alberto (Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, MA, 02420, USA). Journal of Photopolymer Science and Technology, 15(4), 655-666 (English) 2002. CODEN: JSTEEW. ISSN: 0914-9244. Publisher: Technical Association of Photopolymers, Japan.
AB Lithog. with 157-nm fluorine lasers is rapidly emerging as the next evolutionary step in optical lithog. and is clearly seen as the likely successor to 193-nm lithog. As has been demonstrated with

the transition to shorter wavelengths in the past, the **resist** materials that were developed for the longer wavelength applications are too absorbent for practical use as high-resoln. single layer **resist** with 157-nm radiation. Fluorine contg. polymers have been demonstrated to be more transparent in this spectral region than pure hydrocarbon polymers. We have developed and evaluated a no. of unique fluoroarom.-based 157-nm **resists** including 4-hexafluoroisopropanol styrene copolymers with t-Bu acrylate and acetyl blocked 4-hexafluoroisopropanol styrene. Our recent **resist** designs are shown to have imaging capability down to 70 nm with a 0.60 NA microstepper.

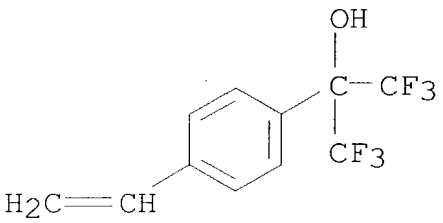
IT **370866-15-2**, tert-Butyl methacrylate-4-Hexafluoroisopropanolstyrene copolymer **397302-34-0**, tert-Butyl acrylate-4-Hexafluoroisopropanolstyrene copolymer
(fluoroarom. **resists** for 157-nm lithog. contg.)

RN 370866-15-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

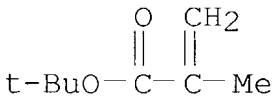
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



CM 2

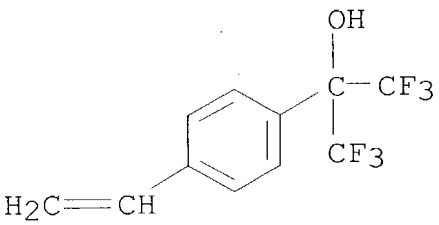
CRN 585-07-9
CMF C8 H14 O2



RN 397302-34-0 HCAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

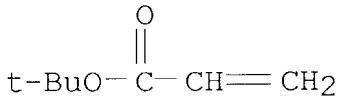
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



CM 2

CRN 1663-39-4
CMF C7 H12 O2



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST fluoroarom **photoresist** photolithog
IT **Photoresists**
Thickness
(fluoroarom. **resists** for 157-nm lithog.)
IT Etching
(plasma, oxide; fluoroarom. **resists** for 157-nm lithog. contg.)
IT Photolithography
(vacuum UV; fluoroarom. **resists** for 157-nm lithog.)
IT 9011-14-7, Poly(methyl methacrylate) 25189-00-8, Poly(tert-butylmethacrylate) 25232-27-3, Poly(tert-butylacrylate) 59269-51-1, Poly(hydroxystyrene) 64114-51-8, Poly(isobornylmethacrylate) 116352-29-5, 4-

Hexafluoroisopropanolstyrene homopolymer 175284-06-7, tert-Butylacrylate-hydroxystyrene copolymer **370866-15-2**, tert-Butyl methacrylate-4-Hexafluoroisopropanolstyrene copolymer **397302-34-0**, tert-Butyl acrylate-4-Hexafluoroisopropanolstyrene copolymer 459424-12-5 459424-15-8 479073-24-0
(fluoroarom. **resists** for 157-nm lithog. contg.)

L23 ANSWER 23 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2002:560003 Document No. 137:233574 Fluorocarbon polymer-based **photoresists** for 157-nm lithography. Fedynyshyn, T. H.; Mowers, W. A.; Kunz, R. R.; Sinta, R. F.; Sworin, M.; Cabral, A.; Curtin, J. (Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, MA, 02420, USA). Polymeric Materials Science and Engineering, 87, 398-399 (English) 2002. CODEN: PMSEDG. ISSN: 0743-0515. Publisher: American Chemical Society.

AB The purpose of this work is to explore the utility of the 4-hexafluoroisopropanol styrene (HFIP) moiety as a base sol., arom. component in polymer backbones for 157-nm lithog. The homopolymer exhibits an absorbance of 3.44/g at 157 nm'. Copolymers of HFIP with tert-Bu acrylate were prepd. as well as OH blocked versions of the homopolymer. Various blocking groups were used including carbonates and acetals. The thermal stability of the blocked polymers is compared and contrasted. Properties such as the 157-nm absorbance and thermal degrdn. are shown to be a strong function of the amt. of blocking group present in the polymer. Finally **photoresist** formulations were prepd. from representative polymers and imaging results are presented which indicate that these systems are capable of sub-100 nm resoln.

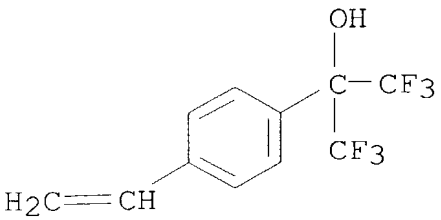
IT **397302-34-0**
(fluorocarbon polymer-based **photoresists** for 157-nm lithog.)

RN 397302-34-0 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

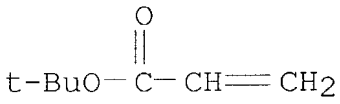
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



CM 2

CRN 1663-39-4
CMF C7 H12 O2



CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 74
ST fluorocarbon polymer based **photoresist** lithog; hexafluoroisopropanol styrene polymer **photoresist** lithog
IT Lithography
Photoresists
Thermal stability
(fluorocarbon polymer-based **photoresists** for 157-nm lithog.)
IT Fluoropolymers, uses
(fluorocarbon polymer-based **photoresists** for 157-nm lithog.)
IT Polymer degradation
(thermal; fluorocarbon polymer-based **photoresists** for 157-nm lithog.)
IT 143336-94-1 397302-12-4 397302-18-0 **397302-34-0**
397302-44-2 457048-18-9 459424-12-5 459424-14-7 459424-15-8
(fluorocarbon polymer-based **photoresists** for 157-nm lithog.)
IT 2386-82-5 5292-43-3, tert-Butylbromoacetate
(fluorocarbon polymer-based **photoresists** for 157-nm lithog.)
IT 397302-17-9P
(monomer; fluorocarbon polymer-based **photoresists** for 157-nm lithog.)

L23 ANSWER 24 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2002:392162 Document No. 136:409022 Positive **resist** composition. Aoai, Toshiaki; Yasunami, Shoichiro; Mizutani, Kazuyoshi; Kanna, Shinichi (Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2002061464 A1 20020523, 56 pp. (English). CODEN: USXXCO. APPLICATION: US 2001-961281 20010925. PRIORITY: JP 2000-292537 20000926; JP 2000-379284 20001213; JP 2001-62158 20010306; JP 2001-202298 20010703.

AB The present invention relates to a pos. **resist** compn. comprising: (A) a fluorine group-contg. resin having at least one fluorine atom on at least one of the main chain and the side chain of the polymer skeleton; and having a group capable of decompg. under the action of an acid to increase the soly. in an alkali developer; (B) a compd. capable of generating an acid upon irradn. with one of actinic ray and radiation; and (C) a surfactant contg. at least one of a silicon atom and a fluorine atom. The present invention provides a pos. **photoresist** compn. suitable for use in the microlithog. process in the prodn. of VLSI or high-capacity microchip, or in other photo-fabrication processes. The invention pos. **photoresist** compn. is capable of forming a highly definite pattern using a vacuum UV ray of < 160 nm.

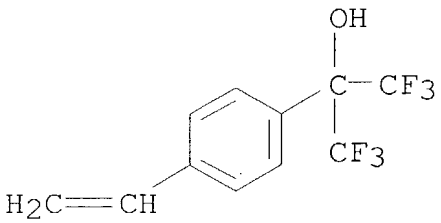
IT **430437-40-4P**
(fluorine group-contg. resin for pos. **resist** compn.)

RN 430437-40-4 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 2-methyl-2-propenenitrile (9CI) (CA INDEX NAME)

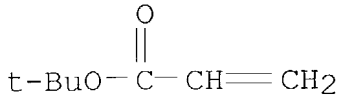
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



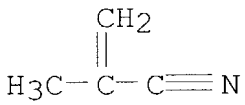
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 126-98-7
CMF C4 H5 N



IC ICM G03F007-004
NCL 430270100
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38, 76
ST **photoresist** fluorine contg resin compn surfactant photolithog UV
IT Surfactants
(fluorine group-contg. pos. **resist** compn. contg.)
IT Positive **photoresists**
(fluorine group-contg. resin for pos. **resist** compn.)
IT Polysiloxanes, uses
(surfactant; fluorine group-contg. pos. **resist** compn. contg.)
IT Photolithography
(vacuum UV; fluorine group-contg. resin for pos. **resist** compn. for)
IT 262617-13-0P 430436-66-1P 430436-67-2P 430436-68-3P
430436-70-7P 430436-72-9P 430436-74-1P 430436-76-3P
430436-78-5P 430436-79-6P 430436-81-0P 430436-82-1P
430436-84-3P 430436-85-4P 430436-86-5P 430436-87-6P
430436-89-8P 430436-90-1P 430436-91-2P 430436-92-3P
430436-94-5P 430436-95-6P 430436-97-8P 430436-98-9P
430436-99-0P 430437-01-7P 430437-03-9P 430437-04-0P
430437-05-1P 430437-07-3P 430437-09-5P 430437-11-9P
430437-12-0P 430437-13-1P 430437-14-2P 430437-15-3P
430437-17-5P 430437-18-6P 430437-19-7P 430437-21-1P
430437-22-2P 430437-24-4P 430437-26-6P 430437-27-7P
430437-29-9P 430437-30-2P 430437-32-4P 430437-33-5P

430437-34-6P 430437-35-7P 430437-36-8P 430437-37-9P
430437-38-0P 430437-39-1P **430437-40-4P** 430437-42-6P
430437-44-8P 430437-46-0P 431062-12-3P 431062-14-5P
431062-16-7P 431062-17-8P 431062-18-9P 431062-20-3P
431062-22-5P 431062-24-7P 431062-25-8P
(fluorine group-contg. resin for pos. **resist** compn.)

IT 144317-44-2, Triphenylsulfonium nonaflate
(photoacid generator; fluorine group-contg. pos. **resist** compn. contg.)

IT 9016-45-9, Polyoxyethylene nonylphenyl ether 137462-24-9, Megafac F176 216679-67-3, Megafac R08
(surfactant; fluorine group-contg. pos. **resist** compn. contg.)

L23 ANSWER 25 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2002:345222 Document No. 136:377471 Positively working radiation-sensitive **resist** composition with improved coatability. Kanna, Shinichi; Kodama, Kunihiko (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002131898 A2 20020509, 63 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-327424 20001026.

AB The compn. contains (A) polymers increasing soly. in alkali developers by decompn. with acids, (B) acid generator by irradn. of actinic ray, (C) org. basic compds., (D) solvents, and (E) 50-5000 ppm surfactants, preferably having fluoroalkyl group in the mol., to get discolored by irradn. of actinic ray. The compn. prevents generation of standing wave.

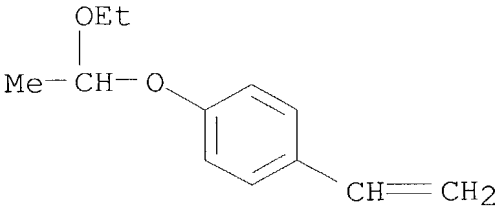
IT **422508-78-9P**
(pos.-working radiation-sensitive **resist** compn. contg. fluoroalkyl-substituted discolorable surfactant with improved coatability)

RN 422508-78-9 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 1,1-dimethylethyl 4-ethenylphenyl carbonate, 1-ethenyl-4-(1-ethoxyethoxy)benzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

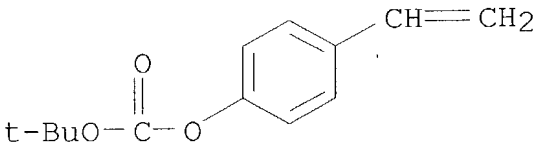
CM 1

CRN 157057-20-0
CMF C12 H16 O2



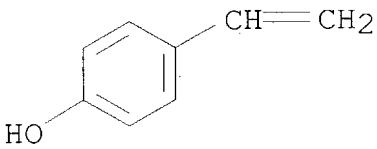
CM 2

CRN 87188-51-0
CMF C13 H16 O3



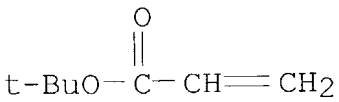
CM 3

CRN 2628-17-3
CMF C8 H8 O



CM 4

CRN 1663-39-4
CMF C7 H12 O2



IC ICM G03F007-004
ICS G03F007-004; C08K005-00; C08L101-12; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST pos radiation sensitive resit coatability standing wave prevention; fluoroalkyl discolorable surfactant radiation sensitive **resist**

IT Positive **photoresists**
Surfactants
(pos.-working radiation-sensitive **resist** compn. contg. fluoroalkyl-substituted discolorable surfactant with improved coatability)

IT 13891-29-7, Triphenylsulfonium p-toluenesulfonate 138529-81-4, Bis(cyclohexylsulfonyl)diazomethane 197447-16-8 422508-79-0
(photoacid generator; pos.-working radiation-sensitive **resist** compn. contg. fluoroalkyl-substituted discolorable surfactant with improved coatability)

IT 109-53-5DP, Isobutyl vinyl ether, reaction products with Bu acrylate-hydroxystyrene copolymer 926-02-3DP, tert-Butyl vinyl ether, reaction products with hydroxystyrene polymer and cyclohexaneethanol 4442-79-9DP, Cyclohexaneethanol, reaction products with hydroxystyrene polymer and Bu vinyl ether 24979-70-2DP, VP 8000, reaction products with Bu vinyl ether and cyclohexaneethanol 121273-79-8P 129674-22-2P, p-(tert-Butoxycarbonyloxy)styrene-p-hydroxystyrene copolymer 158593-28-3P, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer 159296-87-4P, tert-Butyl acrylate-p-vinylphenol copolymer 199432-82-1P, p-Hydroxystyrene-p-(1-isobutoxyethoxy)styrene copolymer 200808-68-0P, tert-Butyl acrylate-p-hydroxystyrene-styrene copolymer 288620-15-5P, p-(1-Benzyloxyethoxy)styrene-p-hydroxystyrene copolymer 325143-38-2P 365971-61-5P 365971-64-8P 365971-70-6P 365971-71-7P 365971-72-8P 376600-58-7P 387382-49-2P 422508-57-4P 422508-61-0P 422508-62-1P 422508-64-3P 422508-65-4P 422508-66-5P 422508-67-6P 422508-71-2P 422508-72-3P 422508-74-5P 422508-76-7P 422508-77-8P **422508-78-9P**
(pos.-working radiation-sensitive **resist** compn. contg. fluoroalkyl-substituted discolorable surfactant with improved coatability)

IT 524-38-9, N-Hydroxyphthalimide 3744-08-9, Triphenylsulfonium iodide 141784-10-3, 2-Nitro-6-trifluoromethylbenzyl alcohol 365971-60-4
(pos.-working radiation-sensitive **resist** compn. contg. fluoroalkyl-substituted discolorable surfactant with improved coatability)

IT 102-82-9, Tributylamine 484-47-9, 2,4,5-Triphenylimidazole 3001-72-7, 1,5-Diazabicyclo[4.3.0]-5-nonene 312386-77-9 422508-59-6 422508-63-2 422508-69-8

(pos.-working radiation-sensitive **resist** compn. contg. fluoroalkyl-substituted discolorable surfactant with improved coatability)

L23 ANSWER 26 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2001:911549 Document No. 136:286470 Development of 157 nm positive **resists**. Ito, H.; Wallraff, G. M.; Fender, N.; Brock, P. J.; Hinsberg, W. D.; Mahorowala, A.; Larson, C. E.; Truong, H. D.; Breyta, G.; Allen, R. D. (IBM Almaden Research Center, San Jose, CA, 95120, USA). Journal of Vacuum Science & Technology, B: Microelectronics and Nanometer Structures, 19(6), 2678-2684 (English) 2001. CODEN: JVTBD9. ISSN: 0734-211X. Publisher: American Institute of Physics.

AB For adequate transparency hexafluoroisopropanol as an acid group and an α-trifluoromethylacrylic moiety as a repeat unit have been selected as 157 nm **resist** polymers. The hexafluoroalc. group is bound to norbornene or styrene. Four platforms are currently available (1) all-acrylic, (2) all-alicyclic, (3) acrylic-alicyclic, and (4) acrylic-arom. systems. While the all-alicyclic (all-norbornene) polymers are synthesized by transition-metal-initiated addn. polymn., all other polymers involving α-trifluoromethylacrylic monomers are prepd. by conventional radical copolymn. Characterization of the polymers and preliminary lithog. evaluation are reported.

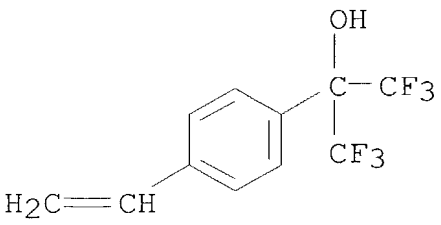
IT **370866-15-2P**
(development of 157 nm pos. **resists**)

RN 370866-15-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

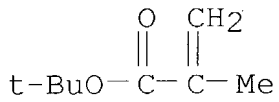
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



CM 2

CRN 585-07-9
CMF C8 H14 O2



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37, 38
ST pos **photoresist** photolithog UV fluoropolymer development
IT Photolithography
Positive **photoresists**
(development of 157 nm pos. **resists**)
IT Fluoropolymers, properties
(development of 157 nm pos. **resists**)
IT Etching
Optical absorption
(development of 157 nm pos. **resists** in relation to)
IT Polysulfones, properties
(development of 157 nm pos. **resists** in relation to)
IT 381-98-6D, polymer with Bu trifluoromethylacrylate and norbornene deriv. 382-90-1 105935-24-8D, polymer with trifluoromethylacrylic acid and norbornene deriv. 196314-61-1
(development of 157 nm pos. **resists**)
IT 370866-13-0P **370866-15-2P** 370866-19-6P
(development of 157 nm pos. **resists**)
IT 381-98-6P, α-Trifluoromethylacrylic acid 105935-24-8P, tert-Butyl α-Trifluoromethylacrylate 116352-29-5P
(development of 157 nm pos. **resists**)
IT 498-66-8, Norbornene
(development of 157 nm pos. **resists**)
IT 585-07-9 9011-14-7, Polymethylmethacrylate 25189-00-8 28825-23-2 59269-51-1, Polyhydroxystyrene 87261-04-9 88403-53-6 159296-87-4 199007-59-5 357397-07-0 370866-39-0 370866-48-1 390746-59-5 397302-12-4 406498-97-3
(development of 157 nm pos. **resists**)
IT 84540-57-8, Propylene glycol methyl ether acetate
(development of 157 nm pos. **resists** in relation to propylene glycol Me ether acetate residual concn. after bake)

L23 ANSWER 27 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2001:803896 Document No. 136:110018 High-resolution fluorocarbon-based **resist** for 157-nm lithography. Fedynyshyn, Theodore H.; Kunz, Roderick R.; Sinta, Roger F.; Sworin, Michael; Mowers, William

A.; Goodman, Russell B.; Doran, Scott P. (Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, MA, 02420, USA). Proceedings of SPIE-The International Society for Optical Engineering, 4345(Pt. 1, Advances in Resist Technology and Processing XVIII), 296-307 (English) 2001. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB Lithog. at 157nm = the next evolutionary step in optical lithog. and is clearly seen as the likely successor to 193nm lithog. If successful, the **photoresists** used for this technol. must be initially capable of 100nm resoln. and be extendable to <70nm. As with the transition to shorter wavelengths in the past, the **photoresist** materials developed for longer wavelengths appear to be too absorbent for practical use as a traditional high resoln. single layer **resist** imageable with 157nm radiation. The high 157nm absorbance of polyacrylate, polycyclic, and polyhydroxystyrene copolymer **resists**, will force the coated **resist** thickness to be under 100nm. Some F-functionalized polymers are more transparent in this spectral region than pure hydrocarbon polymers. This led one to study the use of fluorocarbon polymers in **resists** specially designed for 157nm lithog. The authors synthesized and evaluated a no. of unique 4-hexafluoroisopropanol- styrene based polymer systems that yield **resists** in which the 157nm absorbance ranges from 3.0 to 4.0 μm. **Resists** of this type are potentially capable of imaging at **resist** thickness of 150nm. Examples of the high performance imaging capability of the **resist** design have imaging capability of 150nm with 0.50NA microstepper and 40nm employing interference lithog.

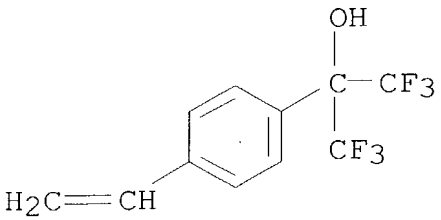
IT **370866-15-2 389610-85-9**
(exposed film thickness loss of polymers in high-resoln. fluorocarbon-based **resist** for 157-nm lithog.)

RN 370866-15-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

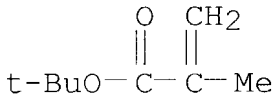
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



CM 2

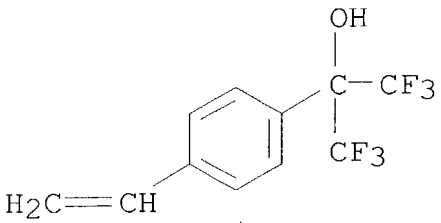
CRN 585-07-9
CMF C8 H14 O2



RN 389610-85-9 HCAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with ethenylbenzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

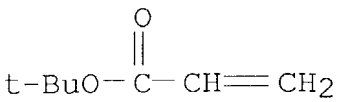
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



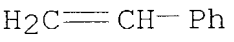
CM 2

CRN 1663-39-4
CMF C7 H12 O2



CM 3

CRN 100-42-5
CMF C8 H8



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST fluorocarbon **resist** 157 nm lithog plasma etching; polyhydroxystyrene fluoropolymer **photoresist** lithog
IT Photolithography
(high-resoln. fluorocarbon-based **photoresist** for 157-nm lithog.)
IT **Photoresists**
(high-resoln. fluorocarbon-based **resist** for 157-nm lithog.)
IT Fluoropolymers, uses
(high-resoln. fluorocarbon-based **resist** for 157-nm lithog.)
IT 9011-14-7 24979-70-2 25189-00-8 25232-27-3 64114-51-8, Isobornyl methacrylate homopolymer 116352-29-5 122056-09-1 159296-87-4 **370866-15-2 389610-85-9**
(exposed film thickness loss of polymers in high-resoln. fluorocarbon-based **resist** for 157-nm lithog.)
IT 7440-21-3, Silicon, uses 24979-71-3 155040-27-0
(high-resoln. fluorocarbon-based **resist** for 157-nm lithog.)
IT 13827-26-4, Calcium fluoride (CaF)
(substrate; high-resoln. fluorocarbon-based **resist** for 157-nm lithog.)
IT 999-97-3
(surface treatment agent; high-resoln. fluorocarbon-based **resist** for 157-nm lithog.)

L23 ANSWER 28 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2001:803895 Document No. 136:175369 Experimental VUV absorbance study of fluorine-functionalized polystyrenes. Kunz, Roderick R.; Sinta, Roger F.; Sworin, Michael; Mowers, William A.; Fedynyshyn, Theodore

H.; Liberman, Vladimir; Curtin, Jane E. (Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, MA, 02420-9108, USA). Proceedings of SPIE-The International Society for Optical Engineering, 4345(Pt. 1, Advances in Resist Technology and Processing XVIII), 285-295 (English) 2001. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB A no. of fluoro-functionalized poly(4-hydroxystyrene) derivs., consisting of both blocked and unblocked hexafluoroisopropanol-substituted styrenes, were prepd. and their vacuum-UV absorption spectra were measured. The authors find that a wide range of synthetic flexibility exists and allows for a variety of fluorinated analogs of APEX-like and ESCAP-like copolymers and terpolymers with 157 nm absorption coeffs. less than 4.0 μm . From these findings, the authors concluded that facile routes to high performance 157 nm resins are possible with optimum imaging thicknesses of 100 to 130 nm.

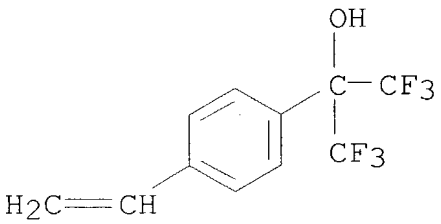
IT **370866-15-2 397302-34-0 397302-39-5 397302-51-1 397302-57-7 397302-62-4 397302-67-9 397302-71-5**
(vacuum-UV absorption spectra of fluorine-functionalized polystyrenes in relation to design of **photoresists** for 157 nm lithog.)

RN 370866-15-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

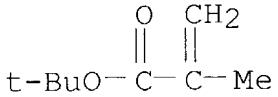
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



CM 2

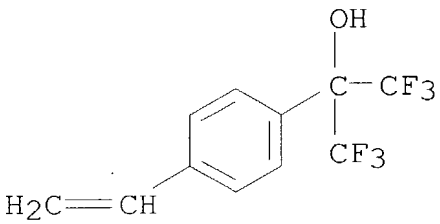
CRN 585-07-9
CMF C8 H14 O2



RN 397302-34-0 HCAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

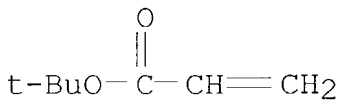
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



CM 2

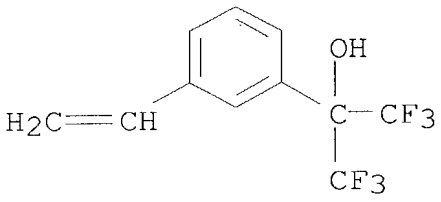
CRN 1663-39-4
CMF C7 H12 O2



RN 397302-39-5 HCAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 3-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

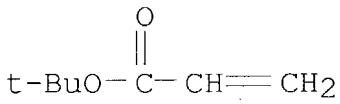
CM 1

CRN 122056-08-0
CMF C11 H8 F6 O



CM 2

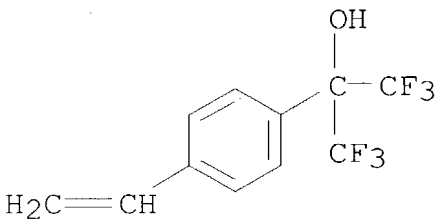
CRN 1663-39-4
CMF C7 H12 O2



RN 397302-51-1 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1-ethenyl-3,5-bis(trifluoromethyl)benzene and 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

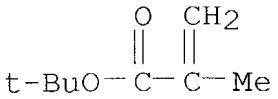
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



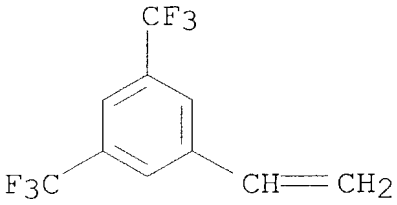
CM 2

CRN 585-07-9
CMF C8 H14 O2



CM 3

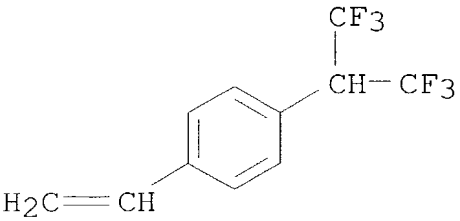
CRN 349-59-7
CMF C10 H6 F6



RN 397302-57-7 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 1-ethenyl-4-[2,2,2-trifluoro-1-(trifluoromethyl)ethyl]benzene (9CI) (CA INDEX NAME)

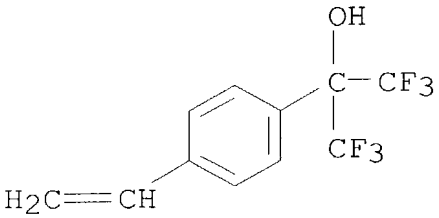
CM 1

CRN 397302-06-6
CMF C11 H8 F6



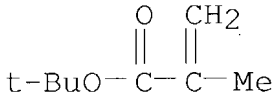
CM 2

CRN 2386-82-5
CMF C11 H8 F6 O



CM 3

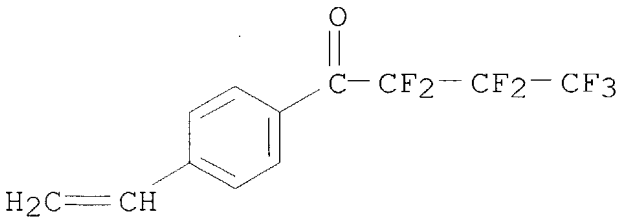
CRN 585-07-9
CMF C8 H14 O2



RN 397302-62-4 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 1-(4-ethenylphenyl)-2,2,3,3,4,4,4-heptafluoro-1-butanone (9CI) (CA INDEX NAME)

CM 1

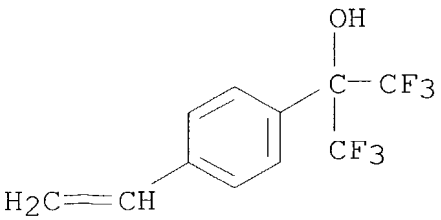
CRN 74946-46-6
CMF C12 H7 F7 O



CM 2

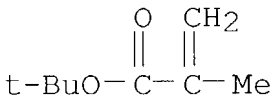
CRN 2386-82-5

CMF C11 H8 F6 O



CM 3

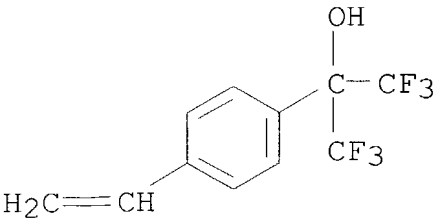
CRN 585-07-9
CMF C8 H14 O2



RN 397302-67-9 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 2-propenenitrile (9CI) (CA INDEX NAME)

CM 1

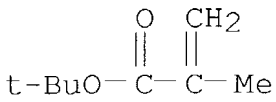
CRN 2386-82-5
CMF C11 H8 F6 O



CM 2

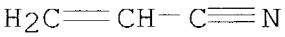
CRN 585-07-9

CMF C8 H14 O2



CM 3

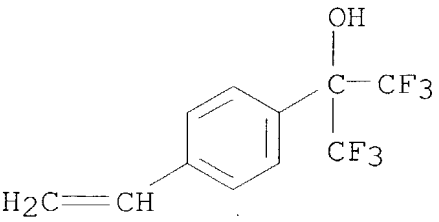
CRN 107-13-1
CMF C3 H3 N



RN 397302-71-5 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol and 2-methyl-2-propenenitrile (9CI) (CA INDEX NAME)

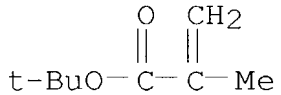
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



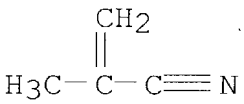
CM 2

CRN 585-07-9
CMF C8 H14 O2



CM 3

CRN 126-98-7
CMF C4 H5 N



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 36, 73

ST optical absorption vacuum UV fluorine functionalized polystyrene **photoresist** design; absorption coeff fluorine functionalized polystyrene vacuum UV lithog **photoresist**

IT Transparency
(UV; vacuum-UV absorption spectra of fluorine-functionalized polystyrenes in relation to design of **photoresists** for 157 nm lithog.)

IT Thickness
(coating properties and vacuum-UV absorption spectra of fluorine-functionalized polystyrenes in relation to design of **photoresists** for 157 nm lithog.)

IT Absorptivity
Optical absorption
Photoresists
Substituent effects
(vacuum-UV absorption spectra of fluorine-functionalized polystyrenes in relation to design of **photoresists** for 157 nm lithog.)

IT 108-94-1, Cyclohexanone, uses 1320-67-8, Propylene glycol monomethyl ether
(casting solvent; vacuum-UV absorption spectra of fluorine-functionalized polystyrenes in relation to design of **photoresists** for 157 nm lithog.)

IT 185195-30-6
(photoacid generator; vacuum-UV absorption spectra of fluorine-functionalized polystyrenes in relation to design of **photoresists** for 157 nm lithog.)

IT 25014-41-9, Acrylonitrile homopolymer 25067-61-2, Methacrylonitrile homopolymer 25189-00-8 25232-27-3 26009-55-2, 4-tert-Butylstyrene homopolymer 28825-19-6 105935-25-9
(ref.; vacuum-UV absorption spectra of fluorine-functionalized polystyrenes in relation to design of **photoresists** for 157 nm lithog.)

IT 9003-53-6, Polystyrene
(ref.; vacuum-UV absorption spectra of fluorine-functionalized polystyrenes in relation to design of **photoresists** for 157 nm lithog.)

IT 7789-75-5, Calcium difluoride, uses
(substrate; vacuum-UV absorption spectra of fluorine-functionalized polystyrenes in relation to design of **photoresists** for 157 nm lithog.)

IT 24936-47-8, Poly(4-fluorostyrene) 31287-32-8, 3-Fluorostyrene homopolymer 59829-16-2, 4-Trifluoroacetylstyrene homopolymer 74946-47-7, 4-(1-Oxyheptafluorobutyl)styrene homopolymer 77884-24-3, 4-Trifluoromethylstyrene homopolymer 77884-32-3, 3,5-Bis(trifluoromethyl)styrene homopolymer 94509-60-1, Pentafluorostyrene homopolymer 116352-29-5, 4-Hexafluoroisopropanolstyrene homopolymer 122056-09-1, 3-Hexafluoroisopropanolstyrene homopolymer 125431-53-0, 2-Hexafluoroisopropanolstyrene homopolymer 143336-94-1 370866-13-0 **370866-15-2** 397302-07-7, 4-Hexafluoroisopropylstyrene homopolymer 397302-12-4 397302-18-0 397302-23-7 397302-29-3 **397302-34-0 397302-39-5** 397302-44-2 **397302-51-1 397302-57-7** **397302-62-4 397302-67-9 397302-71-5**
(vacuum-UV absorption spectra of fluorine-functionalized polystyrenes in relation to design of **photoresists** for 157 nm lithog.)

L23 ANSWER 29 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN

2001:803894 Document No. 136:126405 Polymer design for 157-nm chemically amplified **resists**. Ito, Hiroshi; Wallraff, Gregory M.; Brock, Phillip J.; Fender, Nicolette; Truong, Hoa D.; Breyta, Gregory; Miller, Dolores C.; Sherwood, Mark H.; Allen, Robert D. (IBM Almaden Research Center, San Jose, CA, 95120, USA). Proceedings of SPIE-The International Society for Optical Engineering, 4345(Pt. 1, Advances in Resist Technology and Processing XVIII), 273-284 (English) 2001. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB Based on UV measurements at 157 nm of inhouse fluoropolymers we have selected α -trifluoromethylacrylate and norbornene bearing a pendant hexafluoroisopropanol group as our building blocks for 157 nm **resist** polymers. Polymers consisting of these repeat

units have an optical d./μm of 3 or below at 157 nm. We have found that the α -trifluoromethylacrylate derivs. conveniently undergo radical copolymn. with norbornenes, which has provided a breakthrough in prepn. of our 157 nm **resist** polymers. This approach offers flexibility and versatility because an acidic moiety or acid-labile group can be placed in either acrylate or norbornene repeat unit. Other platforms of interest include all acrylic, all-norbornene, and acrylic-styrenic polymers.

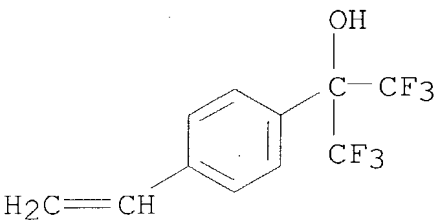
IT **370866-15-2P**
(fluoropolymers for 157-nm chem. amplified **resists**)

RN 370866-15-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

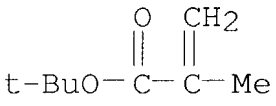
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



CM 2

CRN 585-07-9
CMF C8 H14 O2



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38, 76

ST chem amplified **photoresist** fluoropolymer norbornene

IT Fluoropolymers, properties
(157-nm chem. amplified **photoresists** contg.)

IT Photolithography
(UV; fluoropolymers contg. 157-nm chem. amplified **resists** for)
IT Polymerization
(co-, radical; fluoropolymers for 157-nm chem. amplified **resists**)
IT Absorptivity
Photoresists
Thermogravimetric analysis
(fluoropolymers for 157-nm chem. amplified **resists**)
IT 370866-19-6P 370866-20-9P 370866-22-1P 370866-24-3P
370866-28-7P 370866-33-4P 370866-36-7P
(fluoropolymers for 157-nm chem. amplified **resists**)
IT 370866-39-0 370866-41-4 370866-44-7 391248-28-5 391248-30-9
(fluoropolymers for 157-nm chem. amplified **resists**)
IT 2386-82-5
(fluoropolymers for 157-nm chem. amplified **resists**)
IT 370866-13-0P **370866-15-2P**
(fluoropolymers for 157-nm chem. amplified **resists**)
IT 421-50-1
(prepn. of fluoropolymers for 157-nm chem. amplified **resists**)
IT 381-98-6P, 2-(Trifluoromethyl)acrylic acid 20530-38-5P
370866-43-6P
(prepn. of fluoropolymers for 157-nm chem. amplified **resists**)

L23 ANSWER 30 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2001:621450 Document No. 135:350410 Novel fluoropolymers for use in 157 nm lithography. Ito, H.; Wallraff, G. M.; Fender, N.; Brock, P. J.; Larson, C. E.; Truong, H. D.; Breyta, G.; Miller, D. C.; Sherwood, M. H.; Allen, R. D. (IBM Almaden Research Center, San Jose, CA, 95120, USA). Journal of Photopolymer Science and Technology, 14(4), 583-594 (English) 2001. CODEN: JSTEEW. ISSN: 0914-9244. Publisher: Technical Association of Photopolymers, Japan.
AB Unexpectedly good UV transmittance at 157 nm of poly(norbornene sulfone) bearing a pendant hexafluoroisopropanol functionality has prompted the authors to employ this fluoroalc. as an acid group for the design of chem. amplification **resists** for use in 157 nm lithog. The backbone structures to which the hexafluoroalc. group is attached are polynorbornene and polystyrene. Furthermore, the authors discovery that poly(Me α-trifluoromethylacrylate) is adequately transparent at 157 nm has led the authors to incorporate the α-trifluoromethylacrylic unit in the polymer backbone by radical copolymn. with styrenes and norbornenes. Thus, four platforms are currently available to the authors in prepn. of 157 nm **resist** polymers; (1) all-acrylic, (2)

all-norbornene, (3) acrylic-norbornene, and (4) acrylic-styrenic systems.

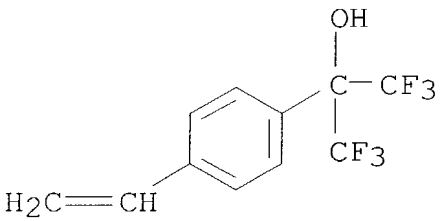
IT **370866-15-2P**, p-(Hexafluoro-2-hydroxypropyl)styrene-tert-butyl methacrylate copolymer
(fluoropolymers based on α-trifluoromethylacrylate copolymers for vacuum UV **photoresist** applications)

RN 370866-15-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 4-ethenyl-α,α-bis(trifluoromethyl)benzenemethanol (9CI) (CA INDEX NAME)

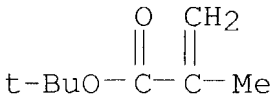
CM 1

CRN 2386-82-5
CMF C11 H8 F6 O



CM 2

CRN 585-07-9
CMF C8 H14 O2



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 36

ST fluoropolymer vacuum UV lithog **photoresist**; fluoromethylacrylate copolymer vacuum UV lithog **photoresist**

IT **Photoresists**
(chem. amplified; synthesis and properties and lithog. evaluation of fluoropolymers based on α-trifluoromethylacrylate copolymers for vacuum UV **photoresist** applications)

IT Dissolution rate

(lithog. evaluation of fluoropolymers based on α-trifluoromethylacrylate copolymers for vacuum UV **photoresist** applications)

IT Polymerization
Polymerization kinetics
(radical; synthesis and properties and lithog. evaluation of fluoropolymers based on α-trifluoromethylacrylate copolymers for vacuum UV **photoresist** applications)

IT Fluoropolymers, properties
(synthesis and properties and lithog. evaluation of fluoropolymers based on α-trifluoromethylacrylate copolymers for vacuum UV **photoresist** applications)

IT 75-59-2, Tetramethylammonium hydroxide
(developer; lithog. evaluation of fluoropolymers based on α-trifluoromethylacrylate copolymers for vacuum UV **photoresist** applications)

IT **370866-15-2P**, p-(Hexafluoro-2-hydroxypropyl)styrene-tert-butyl methacrylate copolymer
(fluoropolymers based on α-trifluoromethylacrylate copolymers for vacuum UV **photoresist** applications)

IT 213740-80-8, Di-(4-tert-butylphenyl)iodonium perfluorooctanesulfonate
(photoacid generator; lithog. evaluation of fluoropolymers based on α-trifluoromethylacrylate copolymers for vacuum UV **photoresist** applications)

IT 78-67-1, AIBN
(synthesis and properties and lithog. evaluation of fluoropolymers based on α-trifluoromethylacrylate copolymers for vacuum UV **photoresist** applications)

IT 370866-17-4P 370866-19-6P 370866-20-9P 370866-22-1P
370866-24-3P 370866-28-7P 370866-33-4P 370866-36-7P
370866-39-0P 370866-41-4P 370866-44-7P 370866-47-0P
370866-48-1P
(synthesis and properties and lithog. evaluation of fluoropolymers based on α-trifluoromethylacrylate copolymers for vacuum UV **photoresist** applications)

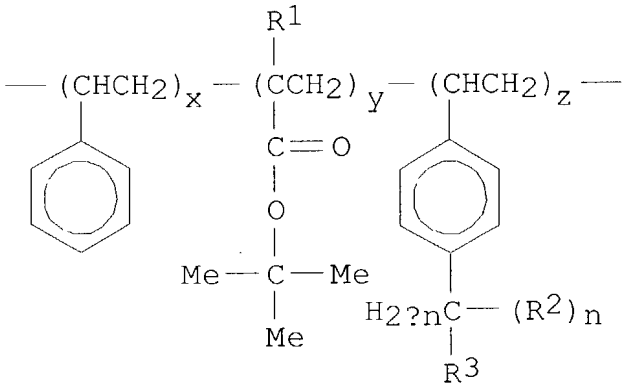
IT 2386-82-5, p-(Hexafluoro-2-hydroxypropyl)styrene 105935-24-8, tert-Butyl α-trifluoromethylacrylate
(synthesis and properties and lithog. evaluation of fluoropolymers for **photoresist** application for 157 nm exposure lithog.)

IT 370866-13-0P, p-(Hexafluoro-2-hydroxypropyl)styrene-tert-butyl α-trifluoromethylacrylate copolymer
(synthesis and properties and lithog. evaluation of fluoropolymers for **photoresist** application for 157 nm exposure lithog.)

L23 ANSWER 31 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN

2001:186038 Document No. 134:214928 Polymer for chemically amplified **resist** and a **resist** composition using the same. Kim, Deog-bae; Kim, Hyun-jin; Choi, Yong-joon; Chung, Yoon-sik (Dongjin Semichem Co., Ltd., S. Korea). PCT Int. Appl. WO 2001018603 A2 20010315, 32 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 2000-KR956 20000825. PRIORITY: KR 1999-37772 19990907.

GI



I

AB The present invention relates to a polymer for a chem. amplified **resist** and a **resist** compn. using the same. The present invention provides a polymer represented by the Formula (I), where R1 = H or Me, R2 = H, or butoxycarbonylethyl, R3 = Cl, Br, OH, CN, T-BuO, CH2NH, CONH2, CH=NH, CH(OH)NH2 or C(OH)=NH, x+y+Z = 1, n = 1 or 2 and when n is 2, both R2 are the same; and a chem. **resist** compn. for extreme UV light comprising the same. The chem. amplified **resist** compn. comprising the polymer represented by the formula (1) of the present invention responds to mono wavelength in a micro-lithog. process and can embody a micro-pattern of high resoln. on a substrate.

IT **328238-42-2P**
(polymer for chem. amplified **resist** and **resist** compn.)

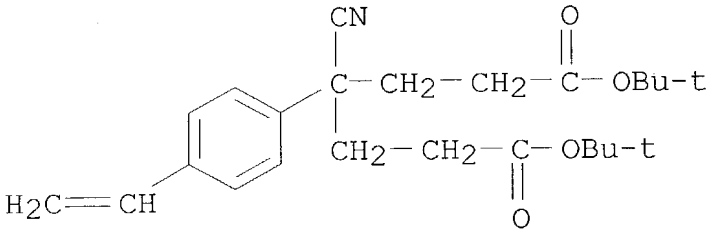
RN 328238-42-2 HCAPLUS

CN Heptanedioic acid, 4-cyano-4-(4-ethenylphenyl)-,

bis(1,1-dimethylethyl) ester, polymer with 1,1-dimethylethyl 2-propenoate and 4-ethenylphenol (9CI) (CA INDEX NAME)

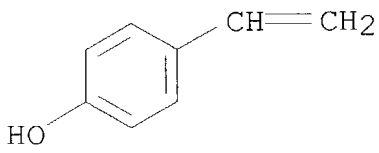
CM 1

CRN 328238-41-1
CMF C24 H33 N O4



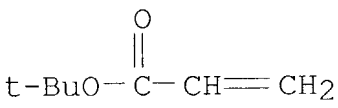
CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

CRN 1663-39-4
CMF C7 H12 O2



IC ICM G03F
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST polymer chem amplified **resist**
IT **Resists**

(chem. amplified; polymer for chem. amplified **resist** and **resist** compn.)

IT Lithography
(polymer for chem. amplified **resist** and a **resist** compn.)

IT Polymers, uses
(polymer for chem. amplified **resist** and **resist** compn. contg.)

IT 84540-57-8, PGMEA
(PGMEA; polymer for chem. amplified **resist** and **resist** compn. contg.)

IT 1592-11-6 1592-20-7, 4-Chloromethylstyrene 1663-39-4, tert-Butyl acrylate 2628-16-2, 4-Acetoxystyrene 328238-41-1
(in synthesis of polymer for chem. amplified **resist** and **resist** compn.)

IT 66003-78-9, Triphenylsulfonium triflate 84563-54-2, Bis(4-tert-butylphenyl)iodonium triflate 144089-15-6
(photoacid generator; polymer for chem. amplified **resist** and **resist** compn. contg.)

IT **328238-42-2P**
(polymer for chem. amplified **resist** and **resist** compn.)

IT 97-64-3, Ethyl lactate
(polymer for chem. amplified **resist** and **resist** compn. contg.)

IT 129674-22-2, 4-Hydroxystyrene-4-(tert-butoxycarbonyloxy)styrene copolymer 158593-28-3, 4-Hydroxystyrene-4-(1-ethoxyethoxy)styrene copolymer
(polymer for chem. amplified **resist** and **resist** compn. contg.)

IT 5551-72-4 56530-39-3
(polymer for chem. amplified **resist** and **resist** compn. contg.)

L23 ANSWER 32 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
2001:137496 Document No. 134:170838 Water-processable **photoresist** compositions. Yamada, Shintaro; Rager, Timo; Willson, C. Grant (Board of Regents, University of Texas System, USA). PCT Int. Appl. WO 2001013179 A1 20010222, 47 pp. DESIGNATED STATES: W: CA, JP, KR; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US22314 20000814. PRIORITY: US 1999-PV148836 19990813; US 1999-PV149622 19990816.

AB The invention relates to water-processable **photoresist** compns. H2O-processable pos.-tone **photoresists** comprising a H2O-sol. polymer, wherein the polymer contains a heat-labile functional group that renders the polymer insol. in H2O or an aq. base upon heat treatment, and an acid-labile functional group that

restores the H2O or aq. base soly. to the polymer upon irradn. in the presence of a H2O-processable photoacid generator, are described. Also described are the methods of making such polymers and **photoresists.**

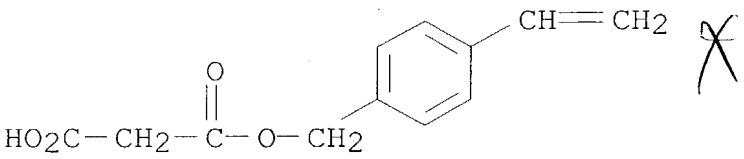
IT **324740-21-8P 324740-23-0P**
(synthesis of polymer for water-processable **photoresist** compns. using)

RN 324740-21-8 HCAPLUS

CN Propanedioic acid, mono[(4-ethenylphenyl)methyl] ester, polymer with 1,1-dimethylethyl 2-propenoate (9CI) (CA INDEX NAME)

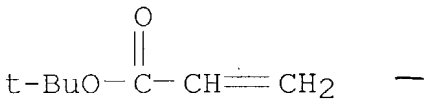
CM 1

CRN 324740-20-7
CMF C12 H12 O4



CM 2

CRN 1663-39-4
CMF C7 H12 O2

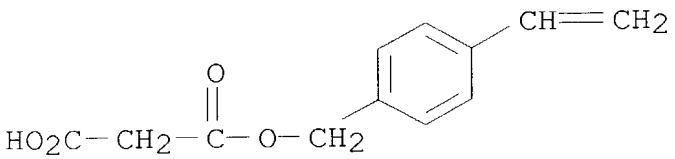


RN 324740-23-0 HCAPLUS

CN Propanedioic acid, mono[(4-ethenylphenyl)methyl] ester, ammonium salt, polymer with 1,1-dimethylethyl 2-propenoate (9CI) (CA INDEX NAME)

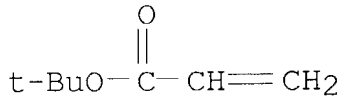
CM 1

CRN 324740-22-9
CMF C12 H12 O4 . H3 N



CM 2

CRN 1663-39-4
CMF C7 H12 O2



IC ICM G03F007-00
ICS G03F007-38; C08F008-48; C08F246-00; G03C001-00
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST water processible **photoresist**
IT Decarboxylation
Thermal decomposition
(synthesis and thermal decompn. of polymer for water-processable pos. **photoresist** compns.)
IT Functional groups
Positive **photoresists**
(synthesis of polymer for water-processable pos. **photoresist** compns.)
IT 324740-09-2P
(synthesis of polymer for water-processable **photoresist** compns.)
IT 324740-27-4P 324740-28-5P
(synthesis of polymer for water-processable **photoresist** compns. using)
IT 124-76-5, Isoborneol 141-82-2, Malonic acid, reactions
1073-67-2, p-Chlorostyrene 1592-20-7, 4-Chloromethylstyrene
1663-39-4, Tert-Butyl acrylate 1791-26-0, 4-Vinylbenzaldehyde
2033-24-1, Meldrum's acid 2628-16-2, 4-Acetoxystyrene 3709-18-0,
2,2,5-Trimethyl-1,3-dioxane-4,6-dione 46122-65-0,

4-Vinylphenylacetic acid 72594-86-6 152845-13-1, Tert-Butyl 4-vinylphenylacetate 173947-43-8 246859-45-0
(synthesis of polymer for water-processable **photoresist** compns. using)

IT 37472-52-9P 324740-06-9P 324740-07-0P 324740-08-1P 324740-10-5P 324740-11-6P 324740-12-7P 324740-14-9P 324740-15-0P 324740-16-1P 324740-17-2P 324740-18-3P 324740-19-4P **324740-21-8P 324740-23-0P** 324740-25-2P
(synthesis of polymer for water-processable **photoresist** compns. using)

IT 324740-13-8P 324740-24-1P 324740-26-3P
(synthesis of polymer for water-processable **photoresist** compns. using)

L23 ANSWER 33 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN

2000:117258 Document No. 132:173395 Radiation-sensitive composition for chemically amplified **photoresist.** Pawlowski, Georg; Okazaki, Hiroshi; Kinoshita, Yoshiaki; Tsugama, Naoko; Hishida, Aritaka; Ma, Xiao-ming; Yamaguchi, Yuko (Clariant International Ltd., Switz.). PCT Int. Appl. WO 2000008525 A1 20000217, 133 pp. DESIGNATED STATES: W: CN, JP, KR, SG, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1999-JP4304 19990809. PRIORITY: JP 1998-225029 19980807; JP 1999-87036 19990329.

AB A chem. amplification-type radiation-sensitive compn. comprising a film-forming resin based on a hydroxystyrene in combination with an onium salt precursor capable of generating a fluorinated alkanesulfonic acid as a radiation-sensitive acid-generating agent. This compn. is free from the occurrence of corrosion of an app. owing to outgassing, the formation of a T-type pattern and the change of line width caused by a delay of processing time, and can be used for achieving a high sensitivity and resolving power and a good and stable pattern formation.

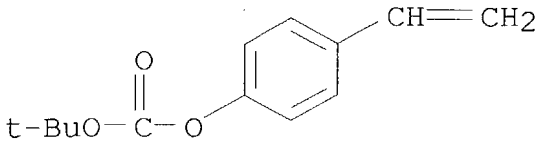
IT **258872-02-5P,** 4-Hydroxystyrene-4-tert-butyloxycarbonyloxystyrene-tert-butyl methacrylate copolymer
(radiation-sensitive compn. for chem. amplified **photoresist**)

RN 258872-02-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethylethyl ester, polymer with 1,1-dimethylethyl 4-ethenylphenyl carbonate and 4-ethenylphenol (9CI) (CA INDEX NAME)

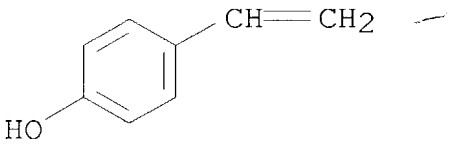
CM 1

CRN 87188-51-0
CMF C13 H16 O3



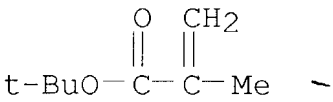
CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

CRN 585-07-9
CMF C8 H14 O2



IC ICM G03F007-004
ICS G03F007-039; G03F007-038; C07C381-12; C07C309-06
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST radiation sensitive compn chem amplification **resist**
IT **Photoresists**
(radiation-sensitive compn. for chem. amplified **photoresist**)
IT Onium compounds
(radiation-sensitive compn. for chem. amplified **photoresist**)
IT 258871-80-6P, Tris(4-hydroxyphenyl)sulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate
(radiation-sensitive compn. for chem. amplified **photoresist**)
IT 76-05-1P, preparation 108-90-7P, Chlorobenzene, preparation

109-92-2DP, Ethylvinyl ether, reaction product with functionalized styrene polymer 110-75-8DP, 2-Chloroethylvinyl ether, reaction product with 4-hydroxystyrene homopolymer 536-80-1P, Iodosylbenzene 827-52-1P, Cyclohexylbenzene 2628-17-3P 5292-43-3DP, tert-Butylbromoacetate, reaction product with hydrolyzed 4-tert-Bu polymer 7758-05-6P, Potassium iodate 12124-97-9P, Ammonium bromide 18995-35-2P 24979-70-2DP, 4-Hydroxystyrene homopolymer, reaction product with functionalized vinyl compd. 34619-03-9DP, Di-tert-butylcarbonate, reaction product with 4-hydroxystyrene homopolymer 68734-62-3P, Trimethylsilylnonafluorobutanesulfonate 94287-61-3P 129361-29-1P 130100-38-8P 133685-94-6P 135648-85-0P, 4-Hydroxystyrene-4-methoxystyrene copolymer 144317-44-2P, Triphenylsulfonium nonafluorobutanesulfonate 155040-27-0P, 4-Hydroxystyrene-tert-butyl methacrylate copolymer 158401-89-9P 174476-25-6DP, 4-Acetoxystyrene-4-tert-butyl acrylate copolymer, hydrolyzed, reaction products with Et vinyl ether 175610-67-0P 176747-00-5P, Diphenyliodonium 3,3,3,2,1,1-hexafluoropropanesulfonate 204065-67-8DP, 4-Hydroxystyrene-4-methylstyrene copolymer, reaction product with ethoxy vinyl ether 241806-75-7P, Tris(4-tert-butylphenyl)sulfonium nonafluorobutanesulfonate 258871-76-0P, Tris(4-tert-butylphenyl)sulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-78-2P, Tri(4-t-butoxyphenyl)sulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-81-7P, Tris(4-tert-butoxycarbonylmethoxyphenyl)sulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-83-9P, β-Oxocyclohexyl 2-norbonylmethyl sulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-84-0P, Bis(4-cyclohexylphenyl)iodonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-85-1P, 4-Methylphenylphenyliodonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-86-2P, Bis(4-tert-butoxyphenyl)phenylsulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-88-4P, Bis(4-methylphenyl)-4-cyclohexylphenylsulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-89-5P, Tris(4-chlorophenyl)sulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-90-8P, 4-Hydroxy-3,5-dimethylphenyldiphenylsulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-91-9P, Di(4-t-butyloxyphenyl)iodonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-94-2P, Di(4-tert-butylcarbonyloxymethyloxyphenyl)iodonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-95-3P, 4-tert-Butylphenylphenyliodonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258871-97-5P, 4-Hydroxystyrene-4-tetrahydropyranyloxystyrene-α,ω-triethyleneglycol divinyl ether copolymer 258871-99-7P, Tris(tert-butylcarbonylmethyloxyphenyl)sulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate 258872-01-4P, Bis(4-cyclohexylphenyl)phenylsulfonium 3,3,3,2,1,1-hexafluoropropanesulfonate **258872-02-5P,**

4-Hydroxystyrene-4-tert-butyloxycarbonyloxystyrene-tert-butyl methacrylate copolymer 258872-05-8P, Diphenyl 4-tert-butylphenylsufonium nonafluorobutanesulfonate 258872-08-1P, Tris(4-butoxyphenyl)sulfonium nonafluorobutanesulfonate 258872-10-5P, Tris(4-tert-butoxycarbonylmethoxyphenyl)sulfonium nonafluorobutanesulfonate 258872-13-8P 258872-14-9P, Bis(4-cyclohexylphenyl)iodonium nonafluorobutylsulfonate 258872-15-0DP, 4-Acetoxystyrene-styrene-tert-butyl methacrylate copolymer, reaction products with hydroxystyrene polymer deriv. 258873-04-0P, Bis(4-hydroxyphenyliodonium) 3,3,3,2,1,1-hexafluoropropanesulfonate
(radiation-sensitive compn. for chem. amplified **photoresist**)

IT 67-68-5, Dimethyl sulfoxide, reactions 71-43-2, Benzene, reactions 75-75-2, Methanesulfonic acid 107-59-5, tert-Butyl chloroacetate 357-31-3 375-73-5 507-19-7, tert-Butyl bromide 591-50-4, Iodobenzene 945-51-7, Diphenylsulfoxide 3085-42-5, 4,4'-Dichlorophenyl sulfoxide 5292-43-3, tert-Butylbromoacetate 29342-65-2, 2-Bromonorbornane 137455-55-1, Tris(4-tert-butoxyphenyl)sulfonium 170632-59-4, Bis(4-tert-butoxyphenyl)sulfoxide 258872-06-9, Diphenyl 4-tert-butylphenylsufonium bromide 258872-11-6, Tris-4(tert-butoxyphenyl)sulfonium nonafluorobutanesulfonate 263871-53-0
(radiation-sensitive compn. for chem. amplified **photoresist**)

IT 216679-67-3, Megafac R 08 258871-96-4, 4-Hydroxystyrene-styrene-tert-butyl methacrylate copolymer
(radiation-sensitive compn. for chem. amplified **photoresist**)

L23 ANSWER 34 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN

1999:689560 Document No. 131:305155 Polymer material for chemically amplified **photoresist**, **photoresist** composition containing the same and its manufacture. Choi, Sang-Jun (Samsung Electronics Co. Ltd., S. Korea). Ger. Offen. DE 19907700 A1 19991021, 14 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1999-19907700 19990223. PRIORITY: KR 1998-14070 19980420.

AB The polymer material for the chem. amplified **photoresist** is made by polymg. ≥2 different monomers and the polymer main chain has acid-instable dialkyl malonate groups like di-tert-Bu malonate or di-tetrahydropyranyl malonate. The **photoresist** compn. comprises the above polymer material, a photoacid generator and an org. base.

IT **247098-49-3P**, 4-(Di-tert-butylmalonyl methyl)styrene-tert-butyl acrylate-4-hydroxystyrene copolymer **247098-52-8P**, 4-(Di-tert-butylmalonyl methyl)styrene-tert-butyl methacrylate-4-hydroxystyrene copolymer

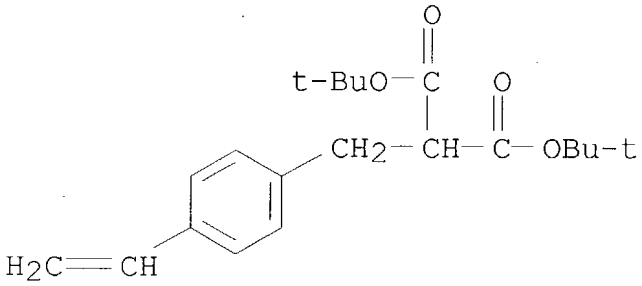
(polymer material for chem. amplified **photoresist**, **photoresist** compn. contg. the same and its manuf.)

RN 247098-49-3 HCAPLUS

CN Propanedioic acid, [(4-ethenylphenyl)methyl]-, bis(1,1-dimethylethyl) ester, polymer with 1,1-dimethylethyl 2-propenoate and 4-ethenylphenol (9CI) (CA INDEX NAME)

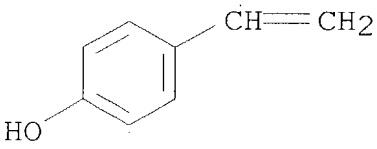
CM 1

CRN 152087-41-7
CMF C20 H28 O4



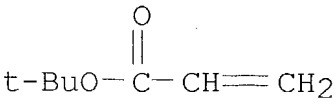
CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

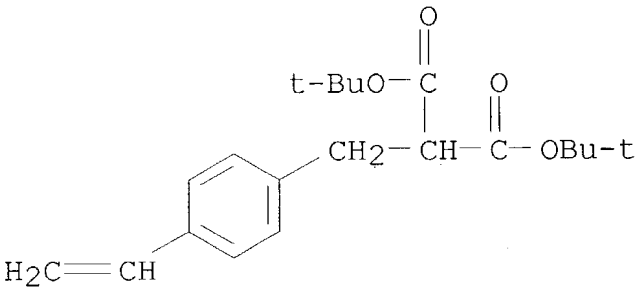
CRN 1663-39-4
CMF C7 H12 O2



RN 247098-52-8 HCAPLUS
CN Propanedioic acid, [(4-ethenylphenyl)methyl]-, bis(1,1-dimethylethyl) ester, polymer with 1,1-dimethylethyl 2-methyl-2-propenoate and 4-ethenylphenol (9CI) (CA INDEX NAME)

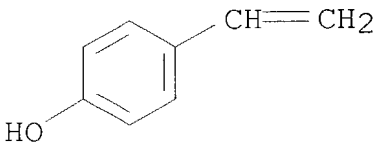
CM 1

CRN 152087-41-7
CMF C20 H28 O4



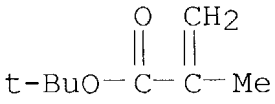
CM 2

CRN 2628-17-3
CMF C8 H8 O



CM 3

CRN 585-07-9
CMF C8 H14 O2



IC ICM C08F212-00
ICS G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST polymer chem amplified **photoresist** compn dialkyl malonate
IT **Photoresists**
(polymer material for chem. amplified **photoresist**, **photoresist** compn. contg. the same and its manuf.)
IT 111-42-2, Diethanolamine, uses
(org. base in chem. amplified **photoresist**)
IT 66003-78-9, Triphenylsulfonium triflate
(photoacid generator in chem. amplified **photoresist**)
IT 247098-44-8P, 4-(Di-tert-butylmalonyl methyl)styrene-4-tert-butoxystyrene-4-acetoxystyrene copolymer 247098-47-1P, 4-(Di-tert-butylmalonyl methyl)styrene-4-(tert-butoxy)styrene-4-hydroxystyrene copolymer 247098-48-2P, 4-(Di-tert-butylmalonyl methyl)styrene-tert-butyl acrylate-4-acetoxystyrene copolymer **247098-49-3P**, 4-(Di-tert-butylmalonyl methyl)styrene-tert-butyl acrylate-4-hydroxystyrene copolymer 247098-50-6P, 4-(Di-tert-butylmalonyl methyl)styrene-tert-butyl methacrylate-4-acetoxystyrene copolymer **247098-52-8P**, 4-(Di-tert-butylmalonyl methyl)styrene-tert-butyl methacrylate-4-hydroxystyrene copolymer
(polymer material for chem. amplified **photoresist**, **photoresist** compn. contg. the same and its manuf.)
IT 541-16-2, Di-tert-butylmalonate 30030-25-2
(prepn. of monomers for manufg. chem. amplified **photoresist**)
IT 152087-41-7P
(prepn. of monomers for manufg. chem. amplified **photoresist**)

L23 ANSWER 35 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
1998:555888 Document No. 129:209343 Chemically amplified **resist** containing vinylbenzenepropionic acid derivative copolymer and pattern formation using same. Yamashita, Yoshio (Oki Electric Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10228112 A2 19980825 Heisei, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-33846 19970218.
AB The title **resist** contains, as a base resin, a (co)polymer having a monomer unit CH[C6H4CR(CH2)nCO2H-p]CH2 (R = H or CmH2m+1; m = 1-3) or a (co)polymer prepd. by polymn. of monomer(s) contg. CH2:CH[C6H4CR(CH2)nCO2H-p]. The **resist** may contain (1) a p-vinyl-β-alkylhydrocinnamic acid-tert-Bu p-vinyl-β-alkylhydrocinnamate copolymer or a p-vinylphenyl-β-alkylhydropropionic acid-methacrylic ester copolymer as a base resin and an acid-generating agent that generates acid upon light irradn.

or (2) a p-vinylphenyl-β-alkylhydropropionic acid-Me p-vinyl-β-alkylhydrocinnamate copolymer base resin, the acid-generating agent, and a dissoln. inhibitor that inhibits the soly. of the base resin in alk. solns. and is decompd. by the action of the acid to lose the dissoln. inhibiting ability. A patterning method using the compns. is also claimed. The **resists** show high transparency toward ArF excimer lasers and dry etching resistance.

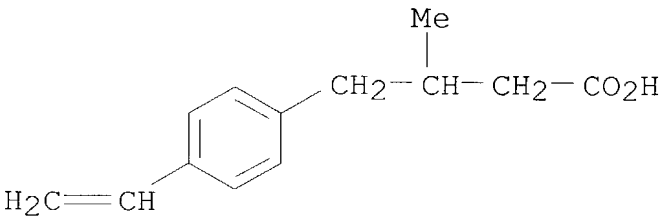
IT **212255-88-4P**
(chem. amplification **resist** compn. contg. vinylbenzenepropionic acid deriv. copolymer and acid generator)

RN 212255-88-4 HCAPLUS

CN Benzenebutanoic acid, 4-ethenyl-β-methyl-, polymer with 1,1-dimethylethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

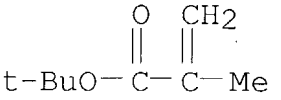
CM 1

CRN 212255-87-3
CMF C13 H16 O2



CM 2

CRN 585-07-9
CMF C8 H14 O2



IC ICM G03F007-039
ICS G03F007-004; G03F007-40; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

ST **resist** vinyl benzenepropionic acid copolymer; acid

generator **resist**; dissoln inhibitor chem amplification **resist**

IT **Resists**
(chem. amplification; chem. amplification **resist** compn. contg. vinylbenzenepropionic acid copolymer and acid generator)

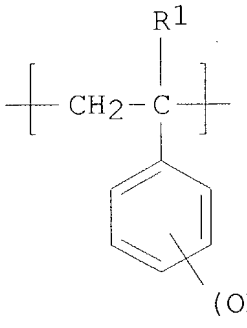
IT 212255-81-7P 212255-85-1P **212255-88-4P**
(chem. amplification **resist** compn. contg. vinylbenzenepropionic acid deriv. copolymer and acid generator)

IT 66003-78-9, Triphenylsulfonium triflate
(chem. amplification **resist** compn. contg. vinylbenzenepropionic acid deriv. copolymer and acid generator)

IT 37994-89-1
(dissoln. inhibitor; chem. amplification **resist** compn. contg. vinylbenzenepropionic acid deriv. copolymer and acid generator)

L23 ANSWER 36 OF 36 HCAPLUS COPYRIGHT 2004 ACS on STN
1997:168467 Document No. 126:164258 Polymer compounds and chemically amplified positive-type **photoresists** using the same providing heat-resistant **resist** patterns. Watanabe, Osamu; Takeda, Yoshifumi; Tsucha, Junji; Ishihara, Toshinobu (Shinetsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 08337616 A2 19961224 Heisei, 38 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-90203 19960319. PRIORITY: JP 1995-111189 19950412.

GI



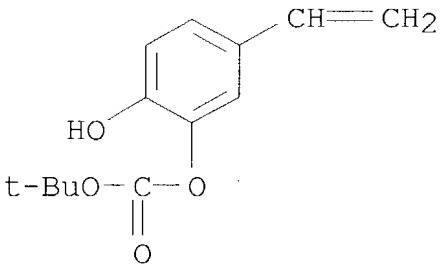
I

AB The title polymers have the general formula I (R1 = H, Me; R2 = H, acid-labile group; at least one of R2 is H and acid labile group; n = 2, 3) of Mw 3000-300,000 and are used with org. solvents and acid generator and optionally phenolic dissoln. control agents for **resists**. A **resist** comprised 3,4-Me3COCO2(HO)C6H3CMe:CH2 polymer 80, p-Me3COC6H4S+Ph2 p-MeC6H4SO3- 3, and DGLM 300 parts.

IT **186768-88-7P**
(polymer compds. and chem. amplified pos.-type **photoresists** using the same providing heat-resistant **resist** patterns)
RN 186768-88-7 HCAPLUS
CN 2-Propenoic acid, 1,1-dimethylethyl ester, polymer with 1,1-dimethylethyl 5-ethenyl-2-hydroxyphenyl carbonate (9CI) (CA INDEX NAME)

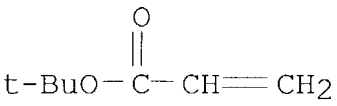
CM 1

CRN 186768-83-2
CMF C13 H16 O4



CM 2

CRN 1663-39-4
CMF C7 H12 O2



IC ICM C08F012-22
ICS C08F220-06; G03F007-004; G03F007-039; H01L021-027
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35
ST hydroxystyrene polymer **photoresist**; acid generator **photoresist**; dissoln control agent **photoresist**; amine additive **photoresist**; sulfonium compd acid generator
IT Positive **photoresists**
(polymer compds. and chem. amplified pos.-type **photoresists** using the same providing heat-resistant

resist patterns)

IT Amines, uses
Bases, uses
Sulfonium compounds
(polymer compds. and chem. amplified pos.-type **photoresists** using the same providing heat-resistant **resist** patterns)

IT Acids, uses
(precursors; polymer compds. and chem. amplified pos.-type **photoresists** using the same providing heat-resistant **resist** patterns)

IT 186768-70-7P 186768-72-9P 186768-74-1P 186768-76-3P
186768-78-5P 186768-80-9P 186768-82-1P 186768-85-4P
186768-86-5P 186768-87-6P **186768-88-7P** 186768-89-8P
186768-90-1P 186768-91-2P 186768-93-4P 186768-94-5P
186768-97-8P 186768-99-0P 186769-00-6P 186769-01-7P
186769-03-9P 186769-05-1P
(polymer compds. and chem. amplified pos.-type **photoresists** using the same providing heat-resistant **resist** patterns)

IT 56-41-7, Alanine, uses 62-53-3, Aniline, uses 95-84-1, 2-Amino-p-cresol 102-71-6, uses 110-60-1, Tetramethylenediamine 110-70-3, N,N'-Dimethylethylenediamine 110-89-4, Piperidine, uses 120-73-0, Purine 127-19-5 142-08-5, 2-Hydroxypyridine 4458-32-6, Methylethylpropylamine 14159-45-6 34521-19-2, Pyridinesulfonic acid 104105-16-0 117458-06-7 123589-22-0 125325-82-8 129674-22-2 141573-11-7 145685-50-3 147625-42-1 151319-83-4D, 2-ethoxyethyl ethers 157089-24-2 158593-28-3 161453-44-7 162102-77-4 168766-36-7D, tert-Bu ethers 170632-63-0 180801-55-2 186769-06-2 186769-08-4 186769-10-8 186769-11-9 186769-12-0 186769-14-2 186811-04-1 186811-05-2D, tert-Bu carbonates 186811-06-3 186811-07-4 186811-08-5 186912-09-4 186912-10-7
(polymer compds. and chem. amplified pos.-type **photoresists** using the same providing heat-resistant **resist** patterns)

=> d l20 1-9 ti

L20 ANSWER 1 OF 9 HCAPLUS COPYRIGHT 2004 ACS on STN
TI Synthesis and evaluation of a solid supported molecular tweezer type receptor for cholesterol

L20 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2004 ACS on STN
TI Aircraft deicing/anti-icing universal fluids

L20 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2004 ACS on STN

TI Aircraft deicing/anti-icing fluids thickened by associative polymers

L20 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2004 ACS on STN
TI Glycol-based aircraft anti-icing fluids thickened by associative polymers containing hydrophobe-bearing macromonomers

L20 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 2004 ACS on STN
TI Complex hydrophobe compounds, macromonomers, and macromonomer-containing polymers

L20 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2004 ACS on STN
TI Aircraft anti-icing fluids thickened by associative polymers

L20 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2004 ACS on STN
TI Electrophotographic photoreceptor

L20 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 2004 ACS on STN
TI High-contrast rapid-processing silver halide photographic material spectrally sensitized with merocyanine dye

L20 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2004 ACS on STN
TI Silver halide color photographic materials

=> d l20 7 cbib abs hitstr hitind

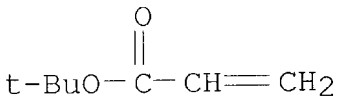
L20 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2004 ACS on STN
1994:311399 Document No. 120:311399 Electrophotographic photoreceptor. Kato, Eiichi; Ishii, Kazuo (Fuji Photo Film Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 05113673 A2 19930507 Heisei, 55 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1991-302665 19911023.

AB In the title photoreceptor comprising a photoconductive layer contg. at least an inorg. photoconductive material, a spectral sensitizing dye, and a binder resin, the above binder resin contains resin A, and resin B. The above resin A is a star type copolymer (wt. av. mol. wt. 1 x 103 - 2 x 104) comprising ≥3 AB type block polymeric chains bonded to an org. mol. with block A contg. monomeric unit CHa1Ca2O2R3 [a1, a2 = H, halo, CN, hydrocarbon; R3 = hydrocarbon], and block B contg. a monomeric unit contg. a polar group(s) selected from PO3H2, SO3H, CO2H, P(O)(OH)R1 [R1 = hydrocarbon, OR2 (R2 = hydrocarbon)] and groups contg. cyclic acid anhydride. The resin B is a star type copolymer (wt. av. mol. wt. 2 x 104 - 1 x 106) comprising ≥3 polymeric chains bonded to an org. mol. with the polymeric chains contg. CHa1Ca2O2R3 30 wt.% and a monomeric unit (0.05-10 wt.%) contg. a polar group defined in A. The photoreceptor shows superior electrostatic properties (esp. in severe conditions) and good mech. properties to give sharp images, and it is very useful in semiconductor laser scanning-exposure.

IT **155218-06-7P**
(star-branched, prepn. and use of, electrophotog. photoreceptor binder resin from)
RN 155218-06-7 HCAPLUS
CN Benzoic acid, 4-ethenyl-, polymer with 1,1-dimethylethyl 2-propenoate and ethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

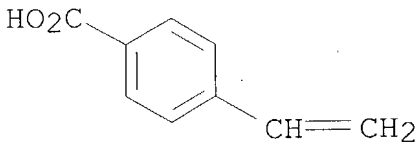
CM 1

CRN 1663-39-4
CMF C7 H12 O2



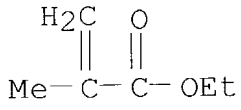
CM 2

CRN 1075-49-6
CMF C9 H8 O2



CM 3

CRN 97-63-2
CMF C6 H10 O2



IC ICM G03G005-05
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 25133-97-5P 27155-22-2P 141681-05-2P 141681-10-9P

144328-03-0P 144407-88-5P 146056-80-6P 149341-90-2P
152792-18-2P 152792-20-6P 152792-21-7P 152792-22-8P
152792-23-9P 152792-24-0P 152792-25-1P 152792-27-3P
152792-28-4P 152792-29-5P 152792-35-3P 153772-11-3P
153772-12-4P 153772-13-5P 153772-14-6P 153772-15-7P
153772-16-8P 153772-17-9P 153772-18-0P 153772-19-1P
153772-20-4P 153772-22-6P 153772-23-7P 153772-24-8P
153772-25-9P 153772-26-0P 153772-28-2P 153772-29-3P
153772-42-0P 153832-26-9P **155218-06-7P**
(star-branched, prepn. and use of, electrophotog. photoreceptor binder resin from)

=>